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ABSTRACT

This handbook provides basic information on the needs of young children (ages 3-8) whose multiple disabilities include visual impairments. Chapters address: (1) common disabilities associated with visual impairment, the primary educational needs of these children, and the complexity involved in teaching them; (2) the need for clearly defined program philosophies, goals, and practices to promote meaningful learning opportunities, including meeting exceptional learning needs, involving the child as an active learner, and integrating objectives from various disciplines; (3) procedures to develop and plan instruction that are meaningful to the child and important to the family; (4) selected instructional strategies such as task analysis, chaining and shaping, use of natural cues and instructional prompts, fading, and creating an environment that encourages active participation; (5) strategies for promoting communication with nonverbal children and those who have severe language difficulties; (6) specific adaptations and strategies for working on daily living skills; (7) roles and responsibilities of a behavior support team, orientation and mobility specialists, and an occupational therapist; (8) the development of an instructional program for a 4-year-old child with multiple disabilities, including visual impairment; and (9) strategies for facilitating communication between the special education and regular education teacher. A final chapter details a family's experience in parenting a little boy who is blind and has multiple medical needs. Each chapter contains references. (CR)

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STARTING POINTS

Instructional practices for young children whose multiple disabilities include visual impairment

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Starting Points

Instructional Practices for Young Children whose Multiple Disabilities include Visual Impairment

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Instructional Practices for Young Children whose Multiple Disabilities include Visual Impairment

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STARTING POINTS
Instructional Practices for Young Children whose Multiple Disabilities include Visual Impairment

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STARTING POINTS

INSTRUCTIONAL PRACTICES FOR YOUNG CHILDREN WHOSE MULTIPLE DISABILITIES INCLUDE VISUAL IMPAIRMENT

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Special thanks go to Linda Clarke, Dr. Kay Ferrell, Dr. Diane Klein, Mary Ellen McCann, Mardi Robers, and Patty Salcedo for their careful review and thoughtful comments about *Starting Points*. Their suggestions have contributed greatly to the overall quality and usefulness of this handbook.

Most of all, we extend our sincere appreciation to the Margaret Bundy Scott Trust for supporting the development, production, and distribution of this publication.

PREFACE

A preface is the first piece you read, but in most cases, it is the last piece written. And this preface is no different. I have had the pleasure of reading *Starting Points: Instructional Practices for Young Children Whose Multiple Disabilities Include Visual Impairment* long before you, and I recommend it highly, especially if you are a teacher or hope to become one. This is a book you will learn from and one you will use.

The field of blindness and visual impairment has expanded its service delivery system over the past 40 years. Nowhere is this more evident than in its embrace of children and adults who have impairments in addition to vision deficits. It wasn't so long ago that children with multiple disabilities in addition to visual impairment were considered too severely challenged to benefit from educational or rehabilitative services. When I entered the field in the early 1970s, the debate was still going on—where did these individuals belong? Who should be the primary service provider? A team approach is necessary, of course, but who should take the responsibility? While others were arguing about the relative intensity of each disability and which of these had the most impact on development and functioning, the community of professionals dealing with blindness opened its doors and began to teach.

The debate may be over. Few special educators today doubt that children with multiple disabilities which include visual impairment should receive the services of a vision specialist. But notice what we have become: "Vision specialists," instead of "Teachers of students with visual impairments." Back in the old days (*my* days), the emphasis was on developing alternative skills and providing specialized instruction for students whose visual learning modality was sporadic or absent altogether. Now too often the emphasis is on developing use of vision, as though that were the only thing that mattered. It isn't, of course, but as more and more teachers find themselves working with children with multiple disabilities, this is what they seem to do, perhaps because this is what they seem to know best. Or perhaps, this is all they were taught to do.

The promise of *Starting Points* is that Drs. Chen and Dote-Kwan have finally bridged the gap between the methodology for teaching children with significant disabilities and the methodology for teaching children with visual impairments. They bring to you, in user-friendly language, what you need to know, from an examination of the most prevalent types of multiple disabilities, to concepts of active learning, to instructional strategies, to specific techniques for developing communication and daily living skills. And then they tell you how to do it as a member of a team, without stepping on toes or wearing out your welcome. With these tools in hand, your interactions with and instruction of young children with multiple disabilities can be more than vision stimulation—you will have the methodology to adapt both instruction and environment to address the visual disability, instead of merely trying to change it.

I have high hopes for the future of early childhood education for children with visual and multiple disabilities, because of Drs. Chen and Dote-Kwan—and because of you. Thank you for reading *Starting Points*. Now, get started.

Kay Alicyn Ferrell, Ph.D
University of Northern Colorado

INTRODUCTION

The development of *Starting Points: Instructional Practices for Young Children Whose Multiple Disabilities include Visual Impairment* was guided by the following principles:

Young children whose multiple disabilities include visual impairment have exceptional learning needs. Quality programs for these children provide systematic instruction within natural routines based on family priorities, values, and concerns; follow the child's lead and interest; use natural consequences and reinforcement to encourage learning; provide a team approach that promotes integration of objectives from various disciplines across daily activities; and encourage the child's active participation in home, school, and community activities.

The primary purpose of *Starting Points* is to provide basic information for the classroom teacher of young children (3 to 8 years of age) whose multiple disabilities include visual impairment. We recognize that these teachers may be trained in early childhood special education, severe disabilities, physical disabilities, visual impairments, or regular education. We also recognize that the population of young children with multiple disabilities is an extremely heterogeneous one. To meet this diversity, we have provided selected examples of children with diverse learning needs in a variety of educational settings.

Chapter one, *Who are Young Children whose Multiple Disabilities include Visual Impairment?*, provides an overview of the most common disabilities associated with visual impairment, the primary educational needs of these children, and the complexity involved in teaching them.

Chapter two, *Guiding Principles for Instruction and Program Development*, identifies the need for a clearly defined program philosophy, goals, and practices to promote meaningful learning opportunities for young children with multiple disabilities. Main ideas include meeting exceptional learning needs, involving the child as an active learner, building on strengths and interests, integrating objectives from various disciplines, and providing instruction during natural situations.

Chapter three, *Essential Steps for Getting Started*, presents procedures to develop and plan instruction that is meaningful to the child and important to the family. Specific strategies include: conducting a family interview to identify priorities; conducting an ecological inventory of the environment; targeting critical activities and areas of instruction; conducting a discrepancy analysis; making adaptations to increase participation; and developing instructional objectives.

Chapter four, *Instructional Strategies*, focuses on selected strategies for children with multiple disabilities, visual impairment, and severe cognitive delays. These include: task analysis; chaining and shaping; use of natural cues and instructional prompts; and fading. In addition, strategies for enhancing visual functioning and creating an environment that encourages active participation are presented.

Chapter five, *Understanding and Developing Communication*, presents strategies for promoting communication with nonverbal children and those who have severe language difficulties. This chapter discusses nonverbal communication behaviors, the purpose or function of these behaviors, and ways to create a need for communication. Strategies include

promoting turn-taking, responding to echolalia, and implementing alternative and augmentative communication strategies.

Chapter six, *Teaching Daily Living Skills*, provides specific adaptations and selected strategies for working on eating, grooming, hygiene, toileting and dressing with children who are blind with other disabilities.

Chapter seven, *Roles and Responsibilities of Selected Disciplines*, describes the role and specialized interventions of a behavior support team, orientation and mobility specialist, and an occupational therapist. This chapter is divided into three sections:

Comprehensive Positive Behavior Support for Young Children with Significant Behavior Problems presents a current positive behavior approach to understanding and interpreting a child's challenging behaviors and for developing appropriate interventions. This approach views a child's behavior as communicative and proposes interventions that are meaningful to and respectful of the child. The section provides examples of the "old" way and "new" way of responding to the challenging behaviors of a four-year-old with significant development delay and severe visual impairment.

Orientation and Mobility for Young Children with Multiple Disabilities discusses the role of the O&M specialist; components of formal O&M training including guide, protective, and trailing techniques; and mobility devices such as the long cane and adaptive mobility devices. This section provides a list of questions the classroom teacher should ask the O&M specialist; special considerations for working with children with multiple disabilities; and a sample O&M lesson for a four-year-old who is in a wheelchair.

Occupational Therapy for Young Children with Multiple Disabilities focuses on sensory integration techniques, state regulation, oral motor and movement concerns, positioning, and functional hand-use. Questions the classroom teacher should ask an OT are included along with an example of occupational therapy for an eight-year-old who has poor body image and self-feeding difficulties.

Chapter eight, *Putting It All Together*, demonstrates the development of an instructional program for a four-year-old child using the strategies and principles discussed in the previous chapters and provides examples of how to use selected forms.

The first eight chapters are written specifically for the classroom teacher of a child with multiple disabilities and visual impairment. These chapters provide basic knowledge and practical information for meeting the learning needs of these young children. The next two chapters take a different focus by addressing teachers in a consultation role and by sharing a family perspective.

Chapter nine, *The Itinerant Teacher as a Consultant*, offers strategies for facilitating communication between the teacher certified in the area of visual impairments and the classroom teacher and other members of an instructional team. In addition, educational recommendations for three preschoolers with multiple disabilities are presented.

Chapter ten, *A Family's Perspective*, shares a compelling story of one family's experience of parenting a little boy who is blind and has multiple medical needs. Written from a mother's perspective, the chapter also provides a look at the family's strength, resources, priorities, and their concerns about the child's future medical and school needs. This chapter demonstrates the family's creativity in adapting and manipulating the environment to provide opportunities for active participation in family routines and school activities.

Note: For the ease of the reader and in the interest of non-sexist terminology, we have alternated the use of "he" or "she" and "him" or "her."

Starting Points

Instructional Practices for Young Children whose Multiple Disabilities include Visual Impairment

Chapter 1

Deborah Chen

WHO ARE YOUNG CHILDREN WHOSE MULTIPLE DISABILITIES INCLUDE VISUAL IMPAIRMENT?

Although the population of visually impaired young children with multiple disabilities has increased significantly, describing these children is a complicated task. First, the extremely heterogeneous nature of this population contributes to the difficulty in developing a succinct definition. Each of these children has unique learning needs. What will help one child may not help—or may even harm—another. Next, the term multiple disabilities takes on different meanings depending on our definitions, attitudes, perspectives, and experiences. For example, some people think of multiple disabilities as involving a severe physical disability or a cognitive delay. The term multiple disabilities usually indicates a combination of two or more severe disabilities that results in exceptional learning needs. Drawing from a review of the literature and field experience, this chapter discusses the common characteristics of various disabilities that tend to occur with visual impairments in order to identify the primary learning needs of young children with multiple disabilities.

PREVALENCE

Over the past 10 years, advances in medical technology which have improved the viability of infants born as early as 23 weeks and at a birthweight as low as 500 grams (Grogaard, Lindstrom, & Parker, 1990; Phelps, 1988) have increased the numbers of young children with visual impairments and multiple disabilities (Leung & Hollins, 1989; Trief, Duckman, Morse, & Silberman, 1989). The most common diagnoses of impaired vision in these children are cortical visual impairments and retinopathy of prematurity (Bishop, 1991; Ferrell, Trief, Dietz, Bonner, Cruz, Ford, & Stratton, 1990). Very premature infants are at risk for multiple disabilities including visual impairment, as are those with severe cortical insult. In addition, certain diagnoses such as cerebral palsy, Down syndrome, fetal alcohol syndrome, and congenital infections such as toxoplasmosis, rubella, cytomegalovirus, and herpes are associated with visual impairment (Capute & Accardo, 1991; Hoon, 1991).

National estimates of children whose multiple disabilities include visual impairment vary according to differences in samples and differences in definitions of disabilities (Orelove & Sobsey, 1991). Research suggests that 42 to 90 percent of children with severe or profound disabilities also have visual impairments (Cress, Spellman, DeBriere, Sizemore, Northam, & Johnson, 1981; Jacobson & Janicki, 1985). Other studies have found that 40 to 70 percent of preschoolers with visual impairments have additional disabilities (Bishop, 1991; Dietz & Ferrell, 1993; Hyvarinen, 1988; Kirchner, 1989).

DESCRIPTION

Children with visual impairments and multiple disabilities are a heterogenous group with visual impairment as the common characteristic. Additional disabilities typically include mental retardation, speech and language deficits, neurological involvements, cerebral palsy, orthopedic impairments, behavioral disorders, and hearing loss (Bishop 1991; Downing & Bailey, 1990).

EXCEPTIONAL INSTRUCTIONAL NEEDS

Children with severe multiple disabilities and visual impairments have limited access to information. This lowers a child's motivation to explore, initiate interactions, or participate actively in everyday situations. As a result, expectations for this child are also lowered. Consequently, the child becomes more

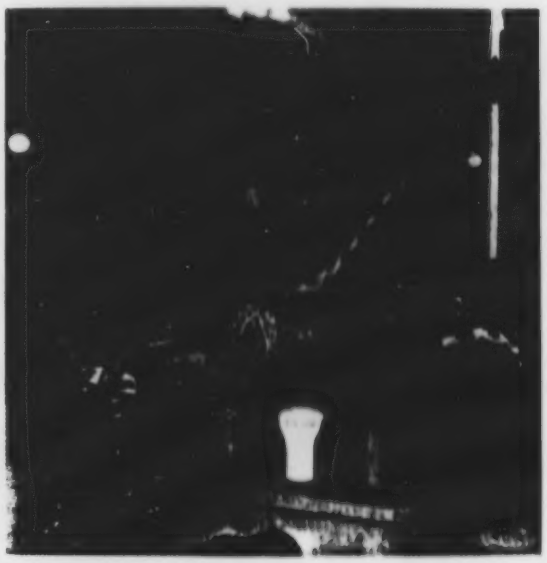
dependent on others and trapped in a cycle of passive and often meaningless activities. The primary goal of special education programs is to provide instructional strategies, learning environments, and learning opportunities which will build on individual strengths and counterbalance these negative tendencies. In order to identify commonalities and differences in the instructional needs of children with multiple disabilities, the next section discusses the specific instructional needs of young children who are blind, those who are low vision, and those with related diagnoses commonly associated with visual impairment.

BLINDNESS

Approximately 25 percent of children identified as visually impaired are totally blind, 25 percent have some light perception, and the other 50 percent have enough functional vision to see large print (Buncic, 1987). Children who are totally blind or who have only light perception must rely on primarily auditory and tactile input to develop an understanding of their world. It's important to remember that handling and touching an object, listening to the sounds it makes, or hearing about it provides a much different perspective than actually seeing it. For example, think about how a blind preschooler might recognize a refrigerator—by the hum, by the handles, and by the metal surface. A sighted preschooler might recognize the refrigerator by its shape and color.

Since tactile and auditory input does not provide the same learning experience as visual input, the blind preschooler's concept of an object should be based on experiences with the real thing rather than on a toy or model. For example, a sighted preschooler has many opportunities to see a real cat across the room, in pictures, and on television. This child can recognize the characteristics of a cat in a stuffed toy or even a plastic model. However, if a preschooler who is blind has not had the opportunity to stroke, handle, or smell a real cat then the stuffed cat or plastic miniature cannot provide the critical features needed to establish the concept of "cat."

Finally, young children who are blind will need specific language concepts to understand verbal descriptions of objects or activities that are not within their experience. For example, the statement "Birds fly" does not require a detailed explanation to a preschooler who can see birds in flight. However, the child who is blind needs a much more elaborate explanation. Instructional strategies for children who are blind typically involve tactile discrimination, listening, and verbal descriptions. Unfortunately, these strategies may be less effective when other severe disabilities accompany blindness.



It's important to remember that handling and touching an object, listening to the sounds it makes, or hearing about it provides a much different perspective than actually seeing it.

LOW VISION

Children with low vision respond to visual stimuli and demonstrate visually directed behavior such as reaching for objects. However, visual information may be blurred or incomplete unless specific adaptations are made to enhance materials and to compensate for the type of vision loss. The first step should be to determine whether this child can benefit from corrective lenses or optical aids based on prescriptions from the child's ophthalmologist, optometrist, or low vision specialist. Since certain types of vision loss will have different

implications for instruction, the teacher should become familiar with the child's specific diagnosis.

In general, children with low vision benefit from opportunities to handle and touch materials that they are examining visually. At the same time, they need verbal input that can highlight the visual features of an object, engage their visual attention, and build their understanding of what is seen and handled. Research has found that nonverbal children with motor difficulties and a variety of visual impairments need to manipulate objects before they are able to visually recognize the objects (Rogow, 1992).

Children who are nearsighted or myopic often benefit by bringing the objects and pictures closer or moving closer to them, by increasing the size of objects or pictures, by using colors which provide strong contrast against the background, by reducing visual distractions, and by eliminating glare from light sources or on shiny surfaces including glossy pictures (Levack, 1994).

Children with a limited field of vision or field loss need to be allowed to position materials or themselves where they can see best, and to be encouraged to search and scan. Materials presented visually should be introduced and changed slowly. A child with a severe field restriction or "tunnel vision" will need to increase rather than decrease the distance between himself and the object being viewed, and will be able to see small objects and pictures better than large ones (Levack, 1994).

Since certain types of vision loss will have different implications for instruction, the teacher should become familiar with the child's specific diagnosis.

When low vision is caused by an ocular disorder, a child receives an incomplete or unclear visual image but can process and interpret visual information. The instructional focus is on helping the child receive a more accurate visual image and to understand visual information. However, some children may have a cortical visual impairment in addition to an ocular problem.

CORTICAL VISUAL IMPAIRMENT

In contrast to ocular disorders, children with cortical visual impairment may receive a clear visual image but have difficulty processing and interpreting visual information (Crossman, 1992; Steendam, 1989). Cortical visual impairment is a result of damage to the visual cortex and/or to the posterior visual pathways. This type of visual impairment is a common diagnosis in children whose severe multiple disabilities are a result of neurological damage. These children may also have seizure disorders or cerebral palsy.

The majority of children with cortical visual impairment have some functional vision although their visual attention is fleeting and their visual skills change from one moment to the next. Visual skills are influenced by several factors including the child's health, medications, energy level, familiarity with the situation, lighting and contrast, and complexity of the visual information (Jan & Groenveld, 1993).

Cortical visual impairment requires different instructional strategies than those for children with low vision with ocular problems. For some children with cortical visual impairment, looking away from objects seems to help them participate in certain activities. Encouraging these children to look at the objects may not be

SEIZURE CLASSIFICATION SYSTEM

CURRENT INTERNATIONAL CLASSIFICATION	PREVIOUS LABEL
GENERALIZED SEIZURES	GENERALIZED SEIZURES
Absence	Petit mal
Myoclonic	Minor motor
Tonic-clonic	Grand mal
Atonic	Akinetic, drop attacks
PARTIAL SEIZURES	FOCAL SEIZURES
Simple partial with motor symptoms	Jacksonian
Complex partial	Psychomotor, Temporal lobe

SOURCE

Commission on Classification and Terminology of the International League Against Epilepsy (1981)

an effective strategy for task completion (Levack, 1994). The following strategies are identified in the literature (Crossman, 1992; Jan, Groenveld, Sykanda & Hoyt, 1987; Levack, 1994):

- Reduce sensory distractions and avoid bombarding the child with multisensory input to allow him to attend to and process visual information.
- Encourage the child to look at and touch objects in order to identify them.
- Present objects widely spaced to reduce visual crowding.
- Decrease viewing distance between the child and materials.
- Use familiar objects and real objects related to daily activities to encourage visual attention, object recognition, and language development.
- Use color—especially yellow or red—to assist with object identification or to highlight materials since color perception is less vulnerable to neurological insult than form or object perception (Hyvarinen, 1988; Jan, Groenveld, Sykanda, & Hoyt, 1987).

SEIZURE DISORDERS

A large number of children with severe multiple disabilities have seizure disorders (Wallace, 1990). Seizures are sudden, unorganized episodes of excessive electrical impulses of brain cells with associated changes in consciousness or behavior, or involuntary motor activity. Epilepsy is a chronic condition characterized by recurrent seizures. Seizures influence a child's ability to attend to and process information. In addition, anticonvulsants and other medications used to control seizures have possible side effects that may further affect a child's ability to learn. There are over 30 different types of seizures but the most common types can be classified as either generalized or partial: generalized seizures involve both sides of the brain and partial seizures are limited to one hemisphere (Batshaw & Perret, 1992).

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Tonic-clonic (grand mal) is the most common generalized seizure affecting the entire body and occurs in 60 percent of individuals with seizure disorders. The child loses consciousness (tonic phase), the body stiffens, and then the muscles alternate between relaxation and spasms (clonic phase) exhibiting rhythmic jerking, sweating, heavy irregular breathing, drooling, skin pallor, and occasional incontinence. The entire seizure usually lasts from one to three minutes. The child may be very disoriented or tired for hours after the seizure. Tonic-clonic seizures usually are not harmful unless they occur in rapid succession or are prolonged. The procedure for dealing with a tonic-clonic or grand mal seizure is as follows (Batshaw & Perret, 1992):

- Remain calm
- Lie the child on a stable surface with head elevated and turned to one side
- Remove child's glasses
- Loosen clothing around the neck
- Observe the child until he is awake and alert
- Call for medical assistance if the child stops breathing or if the seizure lasts more than 10 minutes
- Do not restrain the child
- Do not put anything in the child's mouth
- Do not offer food or drink until the child is fully awake

Absence (petit mal) seizures involve a brief loss of consciousness (one to twenty seconds) and occur in less than five percent of children with epilepsy (Batshaw & Perret, 1992). The child may look dazed, stare, blink rapidly, have mild facial twitching, and seem unaware of what is going on or appear to be daydreaming. These seizures may occur dozens or hundreds of times a day.

Myoclonic (minor motor) seizures are characterized by jerking of the body such as a startle or sharp limb movement. Atonic (akinetic) seizures involve a sudden loss of muscle tone and loss of consciousness (ibid).

Depending on the area of the brain affected, simple partial (Jacksonian) seizures may involve an aura or warning characterized by (a) feelings of fear or deja vu, (b) a limb twitching, (c) increase in pulse, facial flushing or pallor, and/or (d) discomfort in the stomach and chest. Individuals with complex partial (psychomotor) seizures may experience a particular smell or taste, a hallucination, or emotional feelings associated with the seizure. Complex partial seizures involve repetitive actions such as smacking lips, making faces, blinking, chewing, making noises, and/or walking around aimlessly (Batshaw & Perret, 1992). These seizures last from 30 seconds to 5 minutes.

A child may have more than one type of seizure and the patterns of seizures may change over time. Seizures may occur rarely or frequently and may last for a second or minutes. Without medication most seizures will reoccur. Some seizures are difficult or impossible to control, especially when there is severe brain damage. A child's ability to learn is influenced by the side effects of anticonvulsant medications and difficult-to-control seizure disorders.

Teachers should gather information—especially from the family—about the child's seizure disorder including the type, frequency, nature of the seizure, and the child's medications and their side effects. Many medications have side effects which affect the child's visual attention and alertness. Regular communication with the child's family and physician is essential in identifying the child's responses to medication and possible symptoms of medication side effects. See Kelly and Wedding (1995), Levack (1994) and Snell (1993) for a discussion of medications and possible effects on vision and other side effects.

It is most important to document and share observations with the child's family and physicians:

Cerebral palsy is caused by a nonprogressive neurological injury which affects the child's ability to control movement and to maintain balance or posture.

1. What was the child doing just before the seizure began?
2. What did the child do during the seizure?
3. How long did the seizure last?
4. What did the child do after the seizure?

It is also important to know what might elicit a seizure. For example, high fevers, extreme lack of sleep, certain types of visual or tactile stimulation, overstimulation, or heightened emotional feelings may trigger a seizure in some children with seizure disorders. Teachers must take these considerations into account when developing instructional activities. They not only need to know what to expect, but more importantly, what to do if the child has a seizure.

CEREBRAL PALSY

Cerebral palsy is caused by a nonprogressive neurological injury which affects the child's ability to control movement and to maintain balance or posture. Consequently, cerebral palsy also influences the child's ability to manipulate and play with objects, to explore and move about the environment, to communicate verbally, and to perform self-care activities independently.

The timing, cause, location, and extent of neurological injury determines the type and extent of resulting cerebral palsy (Capute & Accardo, 1991; Fraser, Hensinger, & Phelps, 1990). There are three large classes of cerebral palsy: pyramidal (spastic), extrapyramidal (athetoid), and cerebellar (ataxic) based on the major portion of brain involved.

The most common form of cerebral palsy, spastic or pyramidal, occurs in 60 percent of the cases and results in hypertonia (increased muscle tone) and decreased voluntary control (Batshaw & Perret, 1992). Damage on one side of the brain results in difficulty in controlling movements on the opposite side of the body (Geralis, 1991). The child has difficulty initiating movement and is at risk for hip dislocation, elbow, foot, hand, and knee contractures, and scoliosis or deformities of the spine.

Athetoid or extrapyramidal cerebral palsy is diagnosed in 20 percent of children with cerebral palsy (Batshaw & Perret, 1992) and results in slow, writhing movements—particularly of the arms, hands, and fingers; but the head, neck, and face may also be affected (Geralis, 1991). The involvement of facial muscles contributes to difficulties with sucking, swallowing, and speaking. Muscle tone fluctuates from hypotonia to hypertonia

resulting in writhing movements. The child has difficulty controlling movement and maintaining posture. However, contractures are less likely to occur than in spasticity.

The rarest form of cerebral palsy, ataxia or cerebellar, occurs in one percent of the cases (Batshaw & Perret, 1992). The child with ataxia has a very unstable gait as well as balance and coordination difficulties. Lastly, the mixed form of cerebral palsy combines high muscle tone and the involuntary movements of athetoid cerebral palsy.

Although the brain damage is nonprogressive, the resulting muscle problems are not. Muscles may develop contractures (abnormal shortening) that result in abnormal joint positions, commonly at the ankles, hips, knees, and elbows. These joints may slip from normal alignment.

The classroom teacher should work closely with physical and occupational therapists in implementing appropriate interventions for children with cerebral palsy. It is important to use techniques for lifting children safely and to understand the children's assistive devices and equipment (Heydt, 1992). In addition, the teacher should understand the specific type and severity of cerebral palsy that each child has, since interventions will vary accordingly (Finnie, 1990). In general, the child should be placed in as normal a position as possible and in a symmetrical posture. The goal of positioning and handling is to normalize muscle tone as much as possible and to inhibit abnormal reflexes.

Hypertonia

The child with hypertonia requires positioning that reduces tone and improves quality, amount, and range of movement. Frequent changes in position and mobility skills will help prevent contractures and subluxations (dislocation of joints). Developing mobility skills and providing opportunities for the development of weight-bearing are the main goals of the Mobility Opportunities Via Education (M.O.V.E.) program (Bidabe & Lollar, 1990). M.O.V.E. is a functional educational program designed to teach nonambulatory students with severe physical and cognitive disabilities to sit, stand, and walk. Eligibility for the M.O.V.E. program is based upon the student's health and medical needs and requires a physician's approval.

Hypotonia

The child with hypotonia (low muscle tone) is less likely to retain primitive reflexes although postural responses may be delayed. This child has difficulty maintaining stability against gravity because the muscles do not have adequate postural tone. Contractures are rare but hip subluxations may occur because the muscles have difficulty holding the joint intact against external forces. The low tone child needs to be positioned for maximum stimulation to increase muscle tone; for example, in weightbearing positions. Many preschoolers with visual impairments exhibit low tone even though they do not have cerebral palsy. This seems to be related to the lack of adequate vision needed to motivate head movements, which in turn contributes to the development of weight shift and muscle development of the trunk and upper extremities (Bureau of Education for Exceptional Students, 1987). Low tone will influence the posture, balance, coordination, and locomotion of children with visual impairments and will require specific interventions.

Visual Impairments

Approximately 50 percent of children with cerebral palsy will also have an increased incidence of strabismus, field loss, or myopia (Capute & Accardo, 1991). Some children with cerebral palsy have cortical visual impairment. For children with visual impairment and cerebral palsy, finding a balance between visual needs and motor needs becomes extremely important. The child needs a certain level of arousal and postural activity to promote visual attention and visual motor control. For example, an object should be presented to a low vision child within the child's visual field without eliciting an abnormal reflex or extensor pattern. Instructional plans should include the following questions (Geniale, 1991):

- How is the child positioned?
- How are objects and other visual stimuli presented?
- How are the child's movement patterns which inhibit abnormal postural tone encouraged?
- How can the task be adapted to match the child's level of effort?
- How is the use of vision promoted?

In particular, the child with severe cerebral palsy who is totally blind has very limited access to information without specific intervention. This child cannot see what is going on and cannot initiate handling and examining an object. The classroom teacher will need to work closely with other specialists on developing ways to actively involve this child in learning.

AUTISM

Clinicians have observed a relationship between certain etiologies of visual impairment and autistic behaviors (Chase, 1972; Fay, 1975). Some children with visual impairments have specific learning difficulties and behavioral traits which seem similar to those behaviors of children with autism (Gense & Gense, 1994).

Definitions of autism vary according to the diagnostician's discipline, whether the perspective is educational or medical, and the age of the child. Some professionals use the term "autistic-like" when referring to certain stereotypic behaviors such as echolalia, hand flapping, head or body rocking, light gazing, or walking on toes. Many children with visual impairments exhibit these behaviors but are not autistic. In addition, the higher incidence of stereotypic behaviors found in children with multiple disabilities may be related to limitations in learning opportunities (Warren, 1994).

A differential diagnosis should be made by observing and evaluating a child's development of language and communication, social interactions, use of objects or toys, response to sensory stimuli, developmental rates and sequences, and stereotypic behavior (Gense & Gense, 1994).

> *Autism means a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally before age three, that adversely affects educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or changes in routines, and unusual responses to sensory experiences (Federal Register, 1992, p. 44801).*

Children with autism often exhibit weak attachments to significant caregivers, tend not to seek comfort from others when upset or hurt, and display strong attachments to objects (Schreibman, 1988). They are very sensitive to changes in the environment and routines.

Children with autism also exhibit stereotypical behavior such as waving fingers in front of the face, rocking back and forth, or twirling objects. These repetitive acts interfere with learning, social interactions, and inclusion in community settings. However, these behaviors may be an attempt to communicate frustration, boredom, or a way to regulate their own ability to attend (Durand, 1992).

Some children with autism repeat bits and pieces of what they hear. This echolalia may be a way of getting attention or taking a turn in a conversation (Pizant & Rydell, 1984). Approximately half of the children with autism may never learn necessary speech skills to communicate in everyday situations (Alpert & Rogers-Warren, 1985). Therefore, these children will need other forms of communication including sign language, communication boards, technology-assisted devices, and other forms of augmentative communication (Miranda, Iacona, & Williams, 1990).

In general, children with autism have difficulties processing sensory information and may be over- or understimulated by what they see, hear, taste, touch, or smell (Rivto & Freeman, 1978).

Therefore, sensory input will need to be selected carefully, organized, and individualized for a child who is autistic and visually impaired.

HEARING LOSS

It is difficult to estimate the exact number of children with both visual and hearing impairments. Differences in prevalence reports depend on the definition of dual sensory impairments and the age range of the sample. However, there are at least 70 syndromes in which hearing loss and visual impairment tend to occur together (Regenbogen & Coscas, 1985). In addition, major causes of hearing loss during the prenatal and neonatal periods include maternal viral infections, prematurity, hypoxia, and central nervous system infections (Gordon, Appell & Cooper, 1982). These are also causes of visual impairment as well as other disabilities. Consequently, children with multiple disabilities are more likely to have a vision or hearing loss than other children. One out of five children with multiple disabilities are deaf or hard of hearing, and two out of five children with multiple disabilities are blind or visually impaired (Sobsey & Wolf-Schein, 1991).

Definitions

A deaf child cannot understand speech through hearing alone even with the use of a hearing aid, while a hard of hearing child may be able to do so (Moores, 1978). The degree of hearing loss will affect the ability to hear speech. However, when these children have other disabilities as well, non-speech communication methods may be needed.

The intensity or loudness of sound is measured in decibel (dB) units. A person with normal hearing can hear sounds that are between 0-15 dB in a very quiet room. A very soft sound is about 10 dB, normal conversational speech is about 60 dB, and music at a live rock concert will be over 100 dB. The following classifications provide a simple overview of the influence of hearing loss on a child's ability to perceive speech and other sounds (Niswander, 1987; Northern & Downs, 1984):

- A child with a slight hearing loss (15-25 dB) may hear vowel sounds clearly but miss consonant sounds.
- A child with a mild hearing loss (25-40 dB) may hear only loudly voiced speech sounds such as "ah," "oo," "m," and may benefit from amplification.
- A child with a moderate hearing loss (40-65 dB) may miss most words in normal spoken conversation and will usually benefit from amplification.
- A child with a severe hearing loss (65-95 dB) will not hear normal conversational speech or most other sounds except very intense ones such as a car horn when close to a car. Although amplification will not enable this child to hear all sounds, a hearing aid is usually recommended.
- A child with a profound loss (more than 95 dB) hears no speech or other sounds. Amplification might enable this child to be aware of intense environmental sounds, especially those that signal danger such as car horns and sirens.

Approximately 40 percent of children identified as having a hearing loss have a mild loss, 20 percent have a moderate loss, 20 percent have a severe loss, and 20 percent a profound loss (Glorig & Roberts, 1977). About one-third of children with hearing loss have other disabilities, including learning disabilities, mental retardation, and visual impairments (Karchmer, 1985).

Hearing losses can be categorized as either conductive, sensorineural, mixed, or central auditory disorders (Hasenstab & Horner, 1982; Niswander, 1987). Conductive losses are caused by obstructions in the pathway from the ear canal to the inner ear, including middle ear infections, wax, perforated eardrum, or congenital malformations. Conductive losses tend to affect the low frequencies and may be corrected by amplification or medical intervention (Niswander, 1987). Sensorineural loss is caused by damage to the inner ear or

along the auditory nerve. A sensorineural loss is more severe than a conductive hearing loss and usually affects the high frequencies more than the lows (Niswander, 1987). Mixed losses involve both conductive and sensorineural hearing impairments. Central auditory disorders are caused by bilateral damage to the cerebral cortex and result in an inability to understand and interpret sound (Hasenstab & Horner, 1982). A hearing loss or an auditory processing problem will influence the child's ability to develop speech and language. Clearly, a teacher of children with multiple disabilities must understand a child's type and degree of hearing loss in order to provide appropriate instruction.

Dual Sensory Impairments

Children with both vision and hearing impairments are called deaf-blind or dual sensory impaired. These children have significant challenges in developing communication and social interaction skills (van Dijk, 1991). Developing appropriate instructional strategies for these children is a particularly complicated task. The majority of interventions for deaf and hard of hearing children rely on visual strategies such as modeling, speech reading, and sign language. Many interventions for visually impaired children rely on auditory and spoken language skills such as verbal descriptions and listening for environmental cues. Fortunately, about 94 percent of children with dual sensory impairments have some functional vision or hearing (Fredericks & Baldwin, 1987), so it is imperative to ascertain whether the use of corrective lenses, low vision devices, amplification, and other prostheses will benefit a particular child. On the other hand, many of these children have additional disabilities that may also influence social interaction and play, communication, concept development, daily living skills, and orientation and mobility. Teachers of children who are deaf-blind need to integrate effective instructional practices from many special education areas and other disciplines.

TEACHING YOUNG CHILDREN WITH MULTIPLE DISABILITIES

Young children whose multiple disabilities include visual impairment represent an extremely diverse group. First, the term visual impairment includes a range of vision loss, from low vision to light perception to totally blind, as well as a variety of effects on vision, such as blurred vision, field loss, or decreased visual acuity. Second, a variety of disabilities may accompany vision loss. These include cerebral palsy and other physical disabilities, seizure disorders and other neurological impairments, mental retardation, autism and other behavioral disorders, medical and other health needs, and hearing loss. Third, each of these disabilities will vary in type and severity. Fourth, the effects of multiple disabilities is not merely additive. The interaction between two disabling conditions influences the child's learning and development and requires specialized instruction. For example, the child who is very low vision and deaf will need different instructional strategies and adapted communication modes than those used with children with visual impairments or those used with children who are deaf. Similarly, the child who is totally blind and athetoid will need specific adaptations to develop an understanding of everyday activities, acquire a communication system, and gain control over his environment. Fifth, each combination of disabilities will result in unique and exceptional learning needs.

Clearly, teaching young children whose multiple disabilities include visual impairment is very complicated work that requires a team approach involving the family. Depending on the child's learning needs, the instructional team may require an occupational or physical therapist, orientation and mobility specialist, speech and language specialist, behavioral specialist, teacher of children with visual impairments, a teacher of deaf and hard of hearing children, and a teacher of young children with severe disabilities, or a regular preschool or kindergarten teacher. Given the diverse perspectives of different disciplines, a child's instructional program may become

disjointed, piece-meal, or even inappropriate without careful collaboration among these teachers, therapists, specialists, and family members. It is important for the instructional team to understand the influence of each disability on the child's learning and development. It is also critical for the team to identify, develop, and use strategies and adaptations that will facilitate a child's learning. The best way to provide meaningful instruction is by integrating various objectives and strategies from different specialists into the daily classroom schedule.

Moreover, the classroom teacher should become as knowledgeable as possible about the child. This means reviewing all background information and reports; interviewing caregivers, related professionals, and specialists; and observing the child in both familiar and novel situations. The teacher should not only understand the child's specific diagnoses and their implications for instruction but also the child's interests and strengths as well as the family's priorities. A skillful blending of this essential information will result in an effective starting point for developing an appropriate instructional program.

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Chapter 2

Deborah Chen

GUIDING PRINCIPLES FOR INSTRUCTION & PROGRAM DEVELOPMENT

Teaching young children whose multiple disabilities include visual impairment is challenging work, requiring ingenuity, flexibility, and a great deal of common sense. There are no prepackaged curriculum guides or guaranteed teaching techniques. Resourceful teachers create meaningful programs that fit diverse learning needs by drawing from the fields of severe disabilities, visual impairments, early childhood special education, and other disciplines. A teacher needs to establish a clearly articulated philosophy that will guide her instructional practices. These guiding principles should be based upon values and beliefs about what is most important in teaching a child, with special considerations for the exceptional needs of young children whose multiple disabilities include visual impairment. This chapter discusses principles to guide both the development of a program philosophy and instructional programs for this population.

PROGRAM PHILOSOPHY

Every teacher needs to have a clearly articulated program philosophy to guide her interactions with young children and their families. A program philosophy consists of statements that convey values and beliefs about teaching young children and identifies what is most significant about the teaching/learning process. These guiding principles provide the framework for developing program goals and specific instructional practices to meet these goals.

Young children whose multiple disabilities include visual impairment have exceptional instructional needs. High quality programs for these children provide systematic instruction within natural routines based upon: family priorities, values and concerns; natural consequences and reinforcement which follow the child's lead and interests; a team approach which promotes integration of objectives from various disciplines across daily activities and encourages active participation in home, school, and community activities.

From this program philosophy, the following goals are identified:

Program Goals

- To provide instruction that fits the exceptional learning needs of each child.
- To involve the child as an active participant in learning activities.
- To provide instruction that fits family priorities.
- To provide instruction that builds on the child's strengths and interests.
- To integrate objectives from various disciplines across daily activities.

Based on program goals, the following instructional practices will be implemented:

Instructional Practices

- Collaborate with family members and other relevant professionals and observe the child in natural situations to: (a) become knowledgeable about the child's interests, strengths, and learning needs across all instructional areas as well as family concerns and priorities, and (b) develop meaningful and motivating instruction that integrates objectives within natural situations.
- Modify the environment, adapt activities, select materials and strategies which encourage the child's attention, active participation, and integration of sensory information.

Given the logical relationship between philosophy, goals, and instructional practices, a teacher can evaluate whether the program philosophy is valid, whether program goals are met, and whether instructional practices are effective. For a program philosophy to be truly effective, it must be based on research, receive administrative approval and support, and reflect the common belief of everyone involved with instruction. Developing a program philosophy is an essential team-building activity that can result in comprehensive, coordinated, and meaningful instruction for young children whose multiple disabilities include visual impairment.

The next section discusses the importance of involving children with multiple disabilities in meaningful learning experiences and offers suggestions for implementing an active learning process. The following strategies are discussed:

- Meeting exceptional learning needs
- Involving the child as an active learner
- Building on strengths and interests
- Integrating objectives from various disciplines
- Providing instruction during natural situations

MEETING EXCEPTIONAL LEARNING NEEDS

Developing the Senses

Frequently, the vision and hearing losses of young children with severe and multiple disabilities are not addressed appropriately by their educational programs because of inadequate ophthalmological and audiological evaluations and/or follow-up. It is essential for each child to receive the appropriate corrective lenses, magnification, amplification, and other essential prosthetic devices that will provide access to information. In addition, specific instruction will be needed to support the child's use of available vision and/or hearing in everyday situations. Instruction should also build on the child's cognitive, motor, kinesthetic, and tactile abilities. Most importantly, the child will need learning opportunities to understand what is perceived through different senses.

Learning to use and understand sensory information is best accomplished through meaningful and motivating activities within natural situations. For example, within the context of play, a preschooler with low vision can be encouraged to find a favorite toy or to track the movements of a familiar person, and the blind preschooler can listen for the swing to stop moving and for her name to be called to signal that it is her turn on the swing.

Allowing Time

Children whose multiple disabilities include visual impairment need time and opportunities to manipulate objects and to explore materials tactually. Even more time may be needed by a child who has a motor disability or a sensory processing difficulty. Hands-on opportunities and active involvement build concept development, communication, and a child's understanding of an activity. Many of these young children need more time to process information and produce a response. It is important to allow the child time to focus attention and to explore materials before explaining the activity.

Children with visual impairments and other disabilities need extra time to make sense of what is happening. Changes in directions, materials, activities, daily routines, and room arrangement need to be made gradually. A child will be totally confused if things are done differently each time and if everything is in a different place. The importance of routine activities in developing communication is discussed in Chapter 5. Moreover, having a predictable daily routine creates an essential sense of control and provides significant opportunities for skill development.

INVOLVING THE CHILD AS AN ACTIVE LEARNER

Promoting a Sense of Control

Children with severe and multiple disabilities have very little control over the events in their lives. This lack of control has motivational and

cognitive consequences that result in "learned helplessness" (Seligman, 1975). These children have decreased motivation to initiate responses that control events and they have difficulty learning that their actions can result in desired consequences. As a result, these children seem disinterested in the world around them, unmotivated to learn, and lack any initiative. They become passive recipients instead of active participants. Unfortunately, in many cases regimented programs and adult-directed instructional practices have actually encouraged these students to depend on instructional prompts during everyday activities (Downing & Eichinger; 1990; Halle, 1984; Neilsen, 1992).

On the other hand, practicing the philosophy of "following the child's lead" will enable the child to develop a sense of control over events. In developing and providing instructional activities with children whose multiple disabilities include visual impairment, there are many ways to "follow the child's lead."

Contingent stimulation (or response dependent stimulation) is an important strategy of "following the child's lead" to promote active learning. Research has shown that contingent visual stimulation increases the visual attention of preschoolers whose multiple disabilities include visual impairment (Goetz & Gee, 1987; Utley, Duncan, Strain, & Scanlon, 1983). In contingent stimulation, a sensory stimulus is presented as a consequence of a child's behavior; for example, a child looks towards the toy monkey and it lights up, dances, and clangs cymbals. This spectacle occurs only when the child is looking at it. Thus the child learns that looking in that direction makes something happen. In this way, a child begins to anticipate that her actions and behaviors will influence the environment and she becomes an active participant in the learning experience.

On the other hand, noncontingent stimulation is independent of the child's behavior; for example, the mobile that plays music and goes around and around after being wound up, or the toy monkey that flashes, dances, and clangs, regardless of the child's visual attention. In

Do provide instruction which encourages a child to be an active participant.

Do not provide instruction that encourages the child to be a passive recipient.

these situations the child is a passive recipient of auditory and visual stimulation. What happens is not related to what she does.

Passive sensory stimulation should be used judiciously. For example, shiny pompoms, colored lights, and high contrast paper patterns are used frequently for visual stimulation of children with multiple disabilities. Although this

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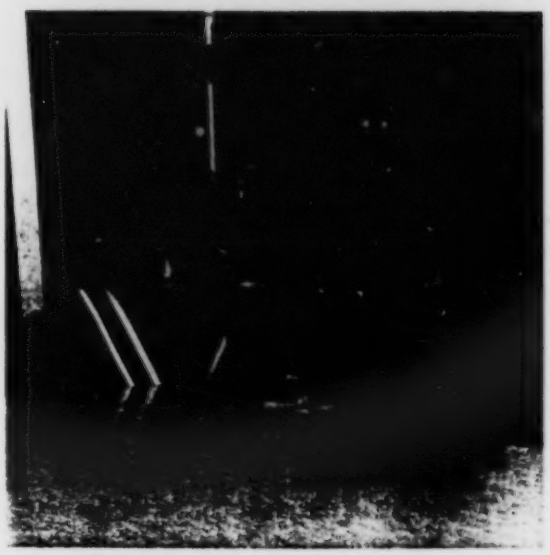
type of stimulation may be necessary to attract the attention of and elicit a response from some children with profound multiple disabilities, it should be a means to increase social interaction and communication rather than an end in itself. Whenever possible, these stimuli should be used to motivate the child to reach, touch, manipulate, and recognize, or to indicate preference within the context of play rather than to have the child merely look at them. There is a significant difference between "learning to look" and "looking to learn" (Rogow, Hass, & Humphries; 1984). The primary reason for a visual stimulation program should be to encourage interaction with the environment through visual examining behaviors and visually guided motor behaviors (Hall & Bailey, 1989).

Research has found that children with the most severe physical disabilities receive more passive stimulation than children with more physical abilities (Downing, 1988). Similarly, observations of children with visual impairment and multiple disabilities reveal that instruction is usually provided through the hand-over-hand method or total physical assistance (Neilsen, 1993). These strategies promote passive participation rather than active learning. It may seem extremely difficult to follow the lead of children with severe multiple disabilities who need total physical assistance for everyday survival activities. A first step in following the child's lead is to allow indication of likes and dislikes, such as offering the choice between apple sauce or mashed potatoes. Another step is to encourage functional use of vision in meaningful situations, such as having the child look at an object to indicate preference or track the movement of the spoon from the bowl while eating. Initially, a light may be needed as a "spotlight" to engage the child's attention. It is also important to recognize the significant difference between looking and seeing. A child whose severe multiple disabilities include visual impairment may look at the spoon but does not understand what he sees. However, opening his mouth in anticipation of food or closing his mouth tightly in anticipation of medicine indicates that he sees or recognizes the spoon and what is on it.

Choice-making Opportunities

Providing opportunities for choice-making is another strategy that encourages active participation and offers a sense of control. However, teachers of children with severe and multiple disabilities have low rates of responses to child-initiated expressions of preferences (Houghton, Buzz Bronicki, & Guess, 1987). Children with severe and multiple disabilities may not make choices naturally because they have not had the experience or they may not understand what is being asked. They require direct instruction to learn how to make choices (Shevin & Klein, 1984). Simply begin by offering a favorite food or toy with something that the child does not like. This way, the child is likely to choose the preferred object and will begin to understand that he can make a choice. In the beginning, children also need to experience the natural outcomes of their choices. Do not choose for the child or change the child's choice. If the child chooses something that he does not like, for example a certain food, encourage a taste and then offer another choice. Rejecting disliked food or accepting a



Whenever possible, limit adult-directed instructional practices because they encourage a child to become dependent on instructional prompts during everyday activities.

Do provide several opportunities throughout the day for the child to learn how to make choices. Examine when it's feasible and natural to offer choices. Encourage the child to participate actively.

favorite toy are communicative behaviors indicating "I don't want it" or " I want that." As discussed in Chapter 5, these nonsymbolic behaviors can be used to expand the child's communication.

Teachers should provide several opportunities throughout the day for the child to learn how to make choices. Examine when it's feasible and natural to offer choices. Observe the context in which the child is offered a choice; where, when, and how are choices offered; through real objects, pictures, signed or spoken questions. Note the child's affect and body language in response to being offered a choice. Does he seem confused, grab the first thing being offered, wait for a prompt, or seem pleased? Observe what behaviors indicate the child's preference. The teacher should consult with the child's family and significant caregivers in order to identify and interpret the child's nonverbal behaviors. Some children make their likes and dislikes clearly known. Other children have subtle signals—a slight change in body posture or an increase in tension may indicate preference.

Allow the child opportunities to decide whether or not to participate in an activity, to select among activities and activity partners, to choose when to end an activity, or how to do an activity in a different way (Guess & Seigel-Causey, 1985). The teacher needs to identify how opportunities for choice-making might be increased throughout the day.

BUILDING ON STRENGTHS AND INTERESTS

Play As an Instructional Context

Learning through play is a motivating and meaningful process for children that is not always recognized by special education programs. Play is the most natural activity for all young children and provides a rich context for instruction for young children with severe disabilities (Hanline & Fox, 1993). A child's cognitive abilities and communication skills will influence how he plays (Odom, McConnell, & McEvoy, 1992). However, opportunities to interact with nondisabled peers seem to encourage social behaviors and discourage self-stimulatory and self-abusive behaviors in preschoolers whose severe multiple disabilities include visual impairment (Erwin, 1993). Even so, many of these young children require specific instructional supports to engage in while playing with toys and with others.

Some kinds of toys are more likely to engage children whose multiple disabilities include blindness. Toys with movable parts and varied

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textures, those that respond when the child acts on them, and those that can be taken apart and put together invite more meaningful tactile exploration than toys like blocks, puzzles, or sandpaper letters. Everyday objects such as pots, spoons, cups, and plates may engage children because of their familiarity and function. Certain toys (e.g., puzzles) will promote solitary play while others (e.g., cars, blocks, and bowls) will tend to support interactions with other children.

Toys should be selected carefully to fit the child's age and abilities. Toys should be evaluated according to children's responses to them and then adapted to meet the child's learning needs (Langley, 1985). Although infant toys tend to have qualities of texture and sound, they are not age-appropriate for preschoolers and kindergartners with visual impairments. In addition, infant toys can only be used in limited ways and they may elicit repetitive and self-stimulatory behaviors (Skellenger, Hill, & Hill, 1992). Children with severe physical disabilities will need toys that are easily handled and toys that respond to "soft" touch, alternative actions, or are activated by switches. Cause and effect or switch-activated toys provide children with the opportunity to learn "I can make something happen." In addition, toys need to be interesting, age-appropriate, simple, safe, and durable.

Preferences and Interests

Teachers should observe the child's preferences and interest in particular objects and activities. Identification of these interests provides the basis for selecting vocabulary, structuring the day, providing reinforcement, pairing the familiar and preferred with the unfamiliar, and understanding the child's perspective. For example, a child may seem to prefer movement activities. In this case, movement activities may be used to encourage interaction with others and to build self-initiation, requests, and language concepts, as well as to provide reinforcement for a less preferred seated activity.

For children who enjoy music, songs may be used as a "scaffold" to support their participation in a less preferred or unfamiliar activity. For example, singing "This is the way we brush our teeth" may help a child participate in tooth-brushing, or favorite music may encourage a child to use the seesaw with a peer.

Initially, real objects should be used; especially those that the child can act on in different ways. For example, an orange is much more interesting than a small plastic ball even though they are both round, can roll, and can represent the concept of "roundness."

As preverbal children develop a concept of real objects, more abstract forms such as line drawings and photographs can be introduced as they become appropriate. Bright colors and contrasting backgrounds should be used with low vision children to engage visual attention and allow discrimination.

Materials should also be selected to fit both the instructional goal and the child's learning style. For example, if a child enjoys getting tactile input from squeezing objects, it may be more difficult to teach him to throw a rubber ball than a hard tennis ball. Or, if a child crumples or tears paper as soon as his hand touches it, he cannot be expected to turn pages of a book during storytime. Alternative materials such as real objects or a book with cardboard pages may be used to enable the child to participate actively. Identifying the child's reaction to materials and objects is an important step in developing an effective instructional program. Observations should include the child's response to all environmental stimuli.

Sensitivity to Stimulation

Children whose multiple disabilities include visual impairment may be very sensitive to certain stimuli and seem to ignore others. Identifying the right amount and appropriate type of stimulation activity for each child is an important and complicated instructional task for teachers. Some children are hypersensitive or have a low threshold of stimulation. They may become overstimulated, confused, and

stressed by everyday sensations. For example, some children with visual impairments become distressed by sudden household noises, such as those made by blenders or vacuum cleaners. Steps should be taken to help the child become familiar with the appliances that make the sounds, to let the child know when these sounds are about to occur, and, if necessary, to dampen the sounds. For example, if a child gets upset by unfamiliar sounds, a headset playing favorite music might help when taking a community trip. Other children with visual impairment become distracted by light and may need to be positioned with their backs to the light source so that the light is on the object being viewed. Other children, especially those with cortical visual impairment and other neurological impairments, are confused by multisensory stimulation. They may respond poorly to simultaneous sensory input. For these children, sensory stimulation should be selected carefully and introduced in a measured and systematic manner.

For some children, certain materials will elicit perseverative or undesirable behaviors. For example, some children are distracted by shiny materials and may have difficulty attending to an instructional activity using such materials. Other children are bothered by scratchy fabric and tags in the back of clothing that irritate their sensitive skin. These children should wear soft, comfortable clothing with the tags removed. Careful observation is needed to determine how each child responds and learns.

Other children are hyposensitive or have a very high threshold of stimulation. They may seem relaxed but withdrawn. For example, some children need vigorous rough-and-tumble play and a multisensory approach to elicit their participation. These children require a different instructional approach than children who are hypersensitive to sensory stimulation. The teacher should collaborate with the family, occupational therapist, and other specialists to provide sensory input that will meet the child's threshold of stimulation.

Matching the Child's Learning Style

Children have different learning styles. However, the most effective way to teach a young child with multiple disabilities is not always obvious. The teacher needs to obtain specific information about the child's learning style by interviewing the family and other relevant people and by making observations.

Getting to Know the Child's Learning Style

1. When is the child most attentive/responsive? Under what conditions, with what people, and for what activities?
2. How much time does the child need to respond?
3. How does the child react to familiar and unfamiliar activities?
4. How does the child use his vision and/or hearing in different situations and activities?
5. How does the child communicate needs, wants, and desires?
6. How does the child react to his prosthetic devices such as hearing aids, glasses, wheelchairs, or walkers?
7. How does this child process information and what are his preferences: tactile, auditory, olfactory, kinesthetic, visual, or combinations of two or more of these?
8. What does this child need to learn? What are the family's concerns and priorities? What are the instructional team's recommendations?

By answering these eight questions, the teacher can identify the child's interests and strengths; the concerns and priorities of other team members; and barriers to developing identified goals or outcomes. Next, the teacher needs to identify the learning environment that will support the child's abilities and provide access to meaningful information. Then she should evaluate whether the current learning environment provides these needed supports and opportunities.

Analyzing the Learning Environment

1. What environmental conditions facilitate learning for this child?

For example, distractions must be identified and subdued for children with a low threshold of stimulation. The physical setting should be organized, furniture must be the appropriate size for the child, the child's wheelchair should fit under the tables, and there should be an appropriate ratio of children to adults. Materials should be presented at an appropriate position and distance for the child's low vision. The child should be positioned appropriately and comfortably for his physical disability.

2. How is the environment responsive?

For example, adults need to follow the children's lead and interests. Children should have opportunities for making choices. Adults must interpret and respond to children's nonverbal communication behaviors.

3. How is the environment predictable?

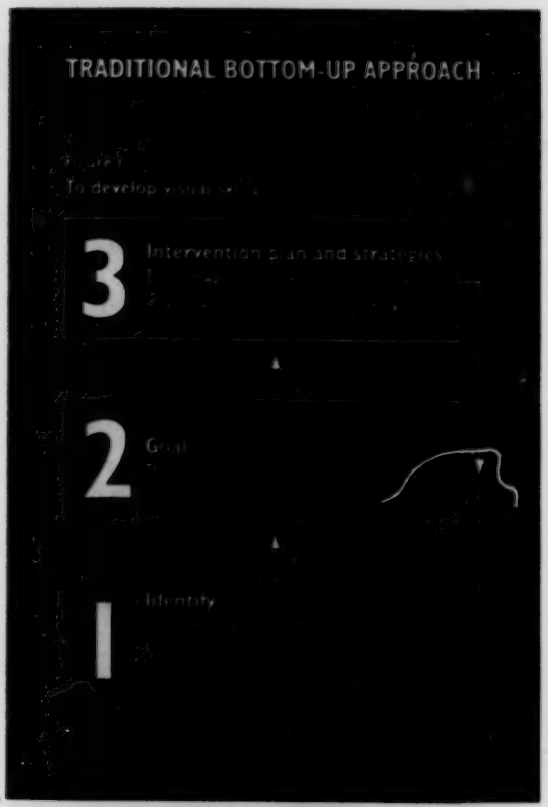
For example, there should be a daily routine. Children need to be familiar with the schedule. Adult expectations of children should be clear.

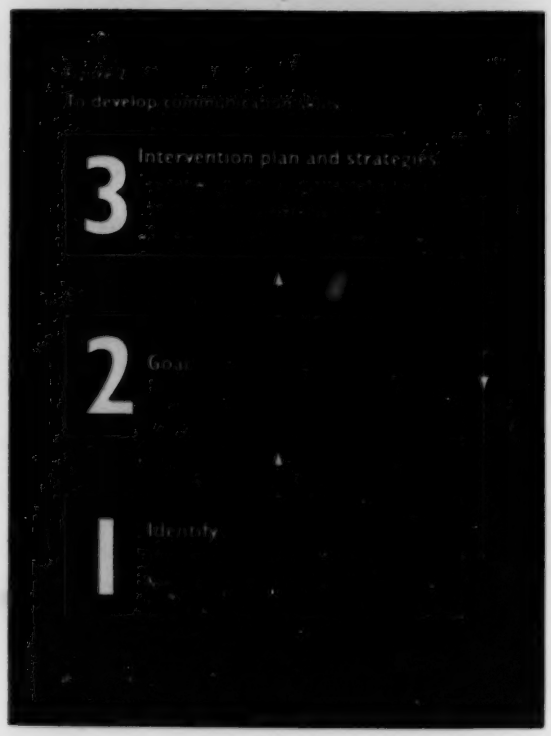
4. How does the child make sense of what is going on?

For example, adults should talk about what is going to happen and what is happening and provide alternative communication, when necessary, for particular children. Adults should provide models of what children will do. Children need time to figure out what is going on.

5. What active learning opportunities are provided?

For example, children must be active participants in activities. They need to be involved in the set-up as well as clean-up of activities. They should be offered choices. Real objects need to be used when possible. Materials and activities should be adapted to encourage each child's participation.





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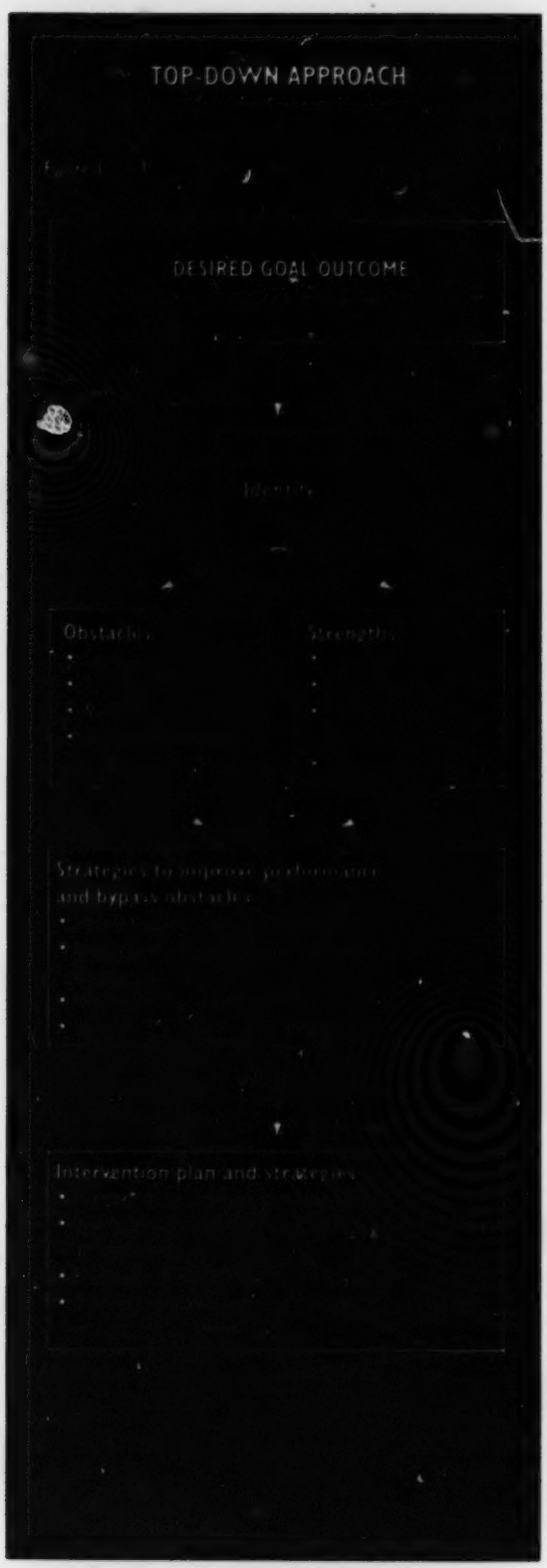

Based on this analysis, environmental modifications can be made and instructional strategies can be identified to promote the child's active participation in an exciting learning process.

Identifying Meaningful Outcomes

Traditionally, teaching young children with severe disabilities has been based on a deficit model of remediating identified weaknesses. This focus has resulted in a bottom-up approach which first identifies a child's strengths and weaknesses, then determines an instructional goal, and finally develops an intervention plan and strategies (Campbell, 1991). Examples of this model are provided in figures 1 and 2. Figure 1 demonstrates the bottom-up approach to developing visual skills. Figure 2 demonstrates the bottom-up approach to developing communication skills.

This approach can result in appropriate and meaningful instruction. However, when children have severe and multiple disabilities, the bottom-up model can result in instructional activities which have little relevance to the child's life beyond the classroom or clinic, and form the basis for a disjointed instructional model.

In recent years, a shift in educational philosophy has resulted in a new focus on meaningful outcomes and ways of building on a child's strengths as an effective approach to teaching young children with severe and multiple disabilities (Brown & Lehr, 1993). This current model uses a top-down approach which first determines the desired goal or outcome for the child; then identifies the obstacles and strengths related to achieving this outcome; next identifies strategies to overcome obstacles and improve performance; and finally develops an intervention plan and strategies (Campbell, 1991). An example of the top-down approach is illustrated in figure 3.

The top-down model provides a useful method for conducting meaningful educational assessments and designing appropriate

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instructional strategies for young children whose severe disabilities include visual impairment.

INTEGRATING OBJECTIVES FROM VARIOUS DISCIPLINES

The following example will illustrate the use of the top-down approach and ways to integrate objectives from various disciplines in designing an instructional program for a preschooler with multiple disabilities.

Example

Mary is a four-year-old who is totally blind and diagnosed as autistic. She is an only child. Her parents have enrolled her in a private preschool in their neighborhood and she receives special education services as identified on her Individual Education Program (IEP). The primary concerns are her social and communication skills.

Desired Outcome

To play with peers.

Obstacles

Mary is nonverbal, does not initiate interactions with peers, engages in eye poking and body rocking during play time, makes noises, and sometimes pinches others when they try to interact with her. Mary is not accustomed to being around other children.

Strength and Interests

Mary enjoys outdoor play, especially the swings and slide. She also likes music and snack time. Mary attends a private preschool in her neighborhood with 14 other children. The emphasis is on a play-based curriculum. There is a teacher and two assistants. In addition, Mary receives instruction from a teacher certified in the area of visual impairments, an orientation and mobility specialist, a speech and language therapist, and an adaptive physical education teacher. There is a strong commitment to having Mary succeed in this setting and to implementing a team approach. Mary's family is actively involved in the school program.

Instructional Strategies

A meeting was held involving Mary's parents, her preschool teacher and assistants, the consultant behavior specialist from the school district, her teacher certified in the area of visual impairments, her speech and language therapist, her orientation and mobility specialist, and her adaptive physical education teacher. The following issues were discussed and an action plan was developed:

- The parents identified Mary's favorite toys and play activities.
- The classroom teacher and staff identified toys and center activities that could be motivating to Mary and that would provide opportunities for interacting with peers. They identified two other children who seemed to like Mary and who prefer outdoor play and music activities.
- The behavior specialist discussed the importance of interpreting Mary's behaviors as communicative. It was agreed that he will collaborate with the family, classroom teacher, and other team members to identify and interpret the purpose of Mary's self-stimulatory and other challenging behaviors, and to develop an appropriate plan for positive behavior support (as described in Chapter 7).
- The teacher certified in the area of visual impairments identified what is needed to engage Mary in favorite play activities, such as specific activity adaptations, environmental modifications, or compensatory skills that Mary needs to develop. In addition, this teacher will assist staff and peers in ways to maintain Mary's attention in a play activity. For example, she will work on Mary's IEP goals while Mary plays a grab-bag tactile matching game with another peer.
- The speech and language therapist will identify Mary's nonverbal communicative behaviors and their functions and develop a communication system that will be used with

Mary at home and school. Depending on when her visits are scheduled, she will model appropriate verbal input during the classroom activities and modify language activities as appropriate and develop turn-taking, play-based routines as described in Chapter 5.

- The orientation and mobility specialist will assist other team members and children in the appropriate sighted guide technique to use with Mary in encouraging her exploration and participation of the center and playground. She will schedule her orientation and mobility instruction to work with Mary on going from the classroom to bathroom and to the playground at the appropriate time (see Chapter 7).
- The adaptive physical education teacher will identify appropriate preschool movement activities and games that address Mary's IEP goals and could involve one or two other children. For example, a "stop and go" movement game to music might motivate Mary's participation.

Based on the combined perspectives of team members, Mary's discipline-specific objectives will be addressed within the context of playing with other children and will build on Mary's areas of strength and interest. All team members involved with implementing Mary's instructional program will use her designated alternative communicative system, use identified orientation and mobility techniques, provide positive reinforcement for desired behaviors, and implement strategies for positive behavior support.

PROVIDING INSTRUCTION DURING NATURAL SITUATIONS

Learning objectives must always be integrated into everyday activities. Concepts must be taught during natural situations. For example,

Figure 4

OBJECTIVES WITHIN ROUTINES MATRIX

Name Vicky (A five-year old who has light perception and is diagnosed as developmentally delayed and autistic.)

Objectives	Daily Routines					
	Arrival	Play Outside	Circle/Music/Stories	Centers	Snack	Bathroom
Vicky will respond to adults' interactions and follow directions, e.g., greetings, routine requests.	X	X	X	X	X	X
Vicky will communicate needs and wants and make choices.		X		X	X	
Vicky will interact with peers by taking a turn, playing together, following their lead.		X	X	X	X	
Vicky will place belongings and other objects in appropriate places, e.g., backpack in cubby, trash in garbage, toys on shelf.	X				X	
Vicky will locate familiar areas by walking to them on her own.			X		X	X
Vicky will use appropriate sighted guide technique.		X		X		
Vicky will locate and select toys and play equipment.		X		X		
Vicky will sort and count objects.			X	X	X	

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Learning objectives must always be integrated into everyday activities, e.g., sorting and number concept tasks can be part of playing with blocks.

counting, sorting, and sequencing can be practiced during setting the table or while putting toys away. In addition, several objectives can be integrated into one activity. For example, orientation and mobility skills, communication, and interaction with peers can be taught during outside play. This approach encourages meaningful and motivating instruction, and most importantly allows the child to generalize what she has learned from one situation to another.

The child's instructional team—teacher, orientation and mobility specialist, speech and language therapist, and other related services—can identify the most appropriate times for working on specific objectives during the child's day. The family can identify their priorities for the child's objectives and learning activities. Together, the family and program staff can complete an "objectives within routines matrix" to implement the child's instructional plan. Figure 4 provides an example that shows when each objective will be worked on during the daily routine. (See Chapter 8 for another example that shows strategies for each objective related to the activity.)

Finally, a teacher should collect data on the child's responses and reflect on activities after they have occurred in order to decide whether instruction was successful, what changes need to be made, and which activities should be discarded:

Evaluating an Activity

1. Did the child enjoy the activity?
2. Was the activity meaningful to the child?
3. Did the child participate actively?
4. Did the child interact with peers?
5. Did the child experience success?
6. What did the child learn?
7. What instructional strategies worked?
8. What changes need to be made for next time?

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Teaching preschoolers with multiple disabilities is a complex and dynamic process involving assessment, instruction, evaluation, and modification of instructional practices. Although these four components are the "nuts and bolts" of the instructional process, the program philosophy is an essential feature that will influence the overall quality of instructional services.

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Chapter 3

Jamie Dote-Kwan

ESSENTIAL STEPS FOR GETTING STARTED

This chapter will discuss the essential steps in developing effective programs for young children whose multiple disabilities include visual impairment. Many of the underlying principles described in this chapter originate from the functional skills approach (Brown, Nietupski, Hamre-Nietupski, 1976) and the Individual Critical Skills Model (Holowach, 1989). These approaches are commonly used in instructional programs for children with severe disabilities. They emphasize critical skills that lead to fuller participation in natural environments. This chapter will discuss the rationale and procedures for the following:

1. Conducting a family interview to identify family priorities;
2. Conducting an ecological inventory of the environment;
3. Targeting critical activities/skills to be taught;
4. Conducting a discrepancy analysis;
5. Determining adaptations for participation;
6. Conducting a functional vision assessment.

See figure 1 for a sequence of procedures used to develop instructional programs for young children whose multiple disabilities include visual impairment.

IDENTIFYING FAMILY PRIORITIES

Conducting an interview with the family is an effective way to identify family priorities. The interview has four purposes:

1. To determine the family's preferences and priorities of what they would like their child to learn.
2. To identify possible activities that can be reinforced in the home environment.
3. To determine the family's perceptions of their child's present level of functioning.
4. To identify the community settings where the family spends time.

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If possible, conduct the family interview in the child's home. This enables the educator to understand the child's home environment and social community. It provides an added benefit of observing how the family interacts with the child, gathering information from siblings, and becoming familiar with the specific living conditions of the child. If the family does not want to be interviewed in their home, suggest a convenient and neutral place such as a local coffee shop, community center, or church. These so-called neutral places are best since they place the parents in settings where they will be familiar and comfortable. For some families the least desirable place would be the educator's classroom because the family may perceive this as the educator's turf. In addition, family interviews should not last more than one hour in length. Interviews that extend past one hour tend to make both parties question the necessity and the value of this activity.

Educators should not be judgmental of families and their living conditions, especially when visiting a child's home. Families from diverse cultural or socioeconomic backgrounds may have very different expectations for visitors in their home. The educator should have some basic understanding of the family's culture to avoid insulting them and to develop a respectful relationship with the family. In other words, be aware of what is expected of visitors in terms of accepting refreshments, addressing other members of the family (grandparents, for example), or involving other family members in making decisions about the child's educational program.

Conducting the family interview in the child's home enables the educator to understand the child's home environment and social community.

SPECIFIC STEPS FOR CONDUCTING A FAMILY INTERVIEW

Setting Up the Interview

1. Set a convenient time and location for the interview with the family where both parents or the significant caregivers can be present, if possible.

2. Inform the parents of the purpose of the interview.

3. Confirm the interview by telephone the day before the interview. This helps remind busy parents and hopefully prevents the educator from arriving to an empty home.

Upon Arrival

4. Introduce yourself to the parents and all family members.

5. Restate the purpose and review the sequence of the interview.

6. Ask the parent(s) to describe a typical weekday in terms of their child's activities and how she participates in them. This typical weekday schedule is the child's Monday through Friday routine. If the child goes to school or day care for part of the day, then the activities from the time the child gets up in the morning until she goes to school or day care and the activities from the time the child arrives home until she goes to bed will be recorded. For example, ask, "Tell me what Sara's typical day is like?" or "How does Sara get up in the morning?" The interviewer wants to get information about the activities the child is engaged in, the approximate length of time allotted to perform a specific activity, and how the child performs the activity. For example, Sara's mother wakes her up and helps her change her clothes. The following suggested questions could be asked:

   • "Does Sara pick out her own clothes?"

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- "Does she remove her pajamas by herself or does she need help?"
- "Does Sara put her clothes on herself?"
- "Does she need help with buttons, snaps, or zippers?"

This type of questioning will give the interviewer information not only about what Sara does, but more importantly, how she does it. This is also a good time to ask parents if there are any activities that Sara cannot perform by herself, that they would like her to learn. This will help establish some of the family's priorities and possible preferences for instructional activities. All of this information can be recorded on the Weekday Schedule form (see figure 2).

7. Repeat the previous step by asking the parent(s) to describe a typical weekend or weekly activities. This identifies activities that do not occur daily, but do occur throughout the week. Some of these activities may include grocery shopping, visiting grandparents, going to the park, or going to church. This information can be recorded on the Weekend Schedule form (see figure 3).
8. Ask the family to describe any additional activities that they would like their child to participate in or learn.
9. Briefly summarize the specific activities the family has identified as critical activities.

Follow-up To the Interview

10. Provide the family with a written copy of the summary of the family interview and thank the family for their time and input either with a personal telephone call or a short, hand-written note.

ECOLOGICAL INVENTORY

After identifying family priorities, conducting an ecological inventory will identify additional activities or skills that could be taught to the child. Ecological inventories involve observing nondisabled peers in a variety of environments (Falvey, 1989). An ecological inventory ensures that the skills will be:

1. Functional, since they are used on a daily basis;
2. Age-appropriate, since the skills are used by peers in the environment (i.e., preschool, primary);

Figure 2

Child's name _____ Date _____

Parent/Care Provider Names _____

Weekday Schedule

Time	Activity	Description of Child's Performance	Family Priorities

Figure 3

Child's name _____ Date _____

Parent/Care Provider Names _____

Weekend Schedule

Time	Activity	Description of Child's Performance	Family Priorities

Ask the parent(s) to describe a typical week in terms of their child's activities and how she participates in them.

Conducting an ecological inventory will identify activities or skills that could be taught to the child.

3. Naturally occurring and reinforced by the environment.

The steps for conducting ecological inventories involve:

1. Identifying the environments that are available to nondisabled peers.
2. Identifying the activities that occur.
3. Identifying the specific skills required or expected by nondisabled peers to participate in the selected activity.

Identify the specific skills required or expected by nondisabled peers to participate in the selected activity.

The educator should observe the child in natural settings and identify either the words, skills, or behaviors used by the nondisabled children in the environment. The following is an example of an ecological inventory for a preschooler on the playground. Although there are several activities such as playing on the swings, playing on the jungle gym, or riding tricycles, the activity of two children playing in the sand box will be illustrated.

Environment: Playground at preschool

Activity: Playing in the sand box

Skill area: Motor and play

Skills: Stepping into the sand box

Locating sand toys (shovel and bucket)

Locating an open space to play

Sitting or squatting in place

Holding the shovel with one hand

Filling the shovel with sand

Pouring the sand into the bucket

Emptying the bucket

Hitting the bucket with the shovel

Picking up the bucket and shovel for clean-up

Stepping out of the sand box

Using the same environment and activity, one can delineate the receptive language needed by the child to play in the sand box. This ecological inventory would include the words and phrases used by adults and nondisabled peers in the activity.

Environment: Playground at preschool

Activity: Playing in the sand box

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Skill area: Receptive language

Understanding child and adult* impact.

Skills: "What are you doing?"

"Can I have the shovel?"

"Can I have the bucket?"

"Gimme the shovel."

"Gimme the bucket."

"What did you make?"

"Move over."

"Are you done?"

"Get out."*

"Clean-up time."*

TARGETING CRITICAL ACTIVITIES

When selecting specific activities for instruction, several factors need to be addressed:

a) Identifying the specific preferences of the child, family, and team members involved in the educational process;

b) Determining the accessibility of natural environments to teach the activity;

c) Determining the frequency of occurrence of the activity across a variety of environments;

d) Selecting activities that are functional for the child;

e) Selecting activities that are chronologically age-appropriate for the child;

f) Determining whether the activity is developmentally appropriate based on the child's current level of functioning.

See figure 4 for a chart of Targeting Critical Activities.

Whether or not one teaches a specific activity is not based on any specific number of factors being achievable or present. In addition, if one or more factors are not practical or present, it should be the responsibility of the educational team (both the family and school personnel) to overcome these obstacles so that the activity can be taught at a later date. For example, John's parents may want him to eat in the school cafeteria so he can interact with nondisabled kindergartners. The instructional staff feel that instruction in a noisy cafeteria would not be appropriate since John is just beginning to learn to chew and swallow without gagging. Working together, John's parents and his teacher decided to have John eat his lunch 30 minutes earlier in the classroom then to go to the cafeteria during the regularly scheduled lunch time for socialization.

Figure 4

Preferences

Identifying instructional priorities includes examining the preferences of the family, the instructional staff, and the individual child. Once family priorities have been identified, it is essential to establish the child's preference for an activity. If the child likes a particular activity she will probably be motivated to learn the activity. On the other hand, if the child dislikes a particular activity she may exhibit negative reactions or refuse to learn the activity. Since the educator and the paraprofessional will be responsible for teaching a new activity to a

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child, it is also important that they are comfortable and knowledgeable about the activity. For example, if learning to swim is a selected activity and the paraprofessional dislikes the water or cannot swim, then he would not be able to teach this skill with confidence or enthusiasm. In addition, teachers and other instructional staff should contribute their recommendations for instructional priorities based on their expertise. Using a team approach with the family, the instructional staff can identify the most critical instructional areas for the child.

Accessible Natural Environments

To determine if an activity can be taught in an accessible environment, several questions need to be asked. First, can the activity be taught in the natural environment? Natural environments are places where the activity would normally occur. For example, a child should not learn toileting skills using a portable potty chair in the classroom; the bathroom would be much better. Second, can the activity be taught in familiar environments? Teaching a child whose family buys their groceries from a truck or van that comes to their neighborhood requires a different set of skills than grocery shopping at a small neighborhood store or a large metropolitan store that has a bakery, delicatessen, and florist. Third, how safe is the environment? Teaching a child to use the playground equipment at the local park may be a chronologically age-appropriate skill, but the environment may be unsafe. Lastly, how accessible is the environment? A family may want their child to learn to swim. However, if the only swimming pool is five miles away and there is no available transportation, this request may not be feasible at this time.

Can the activity be taught in the natural environment?

Natural environments are places where the activity would normally occur.

Teaching a child to use the playground equipment at the local park may be an activity preferred by the family.

Frequency of Occurrence

What is the frequency of occurrence of the activity in the course of the child's day or week? Does this activity naturally occur across a variety of environments (e.g., home, school, community)? A program that allows the child to practice the skills required of an activity frequently and across a variety of environments facilitates the acquisition of skills. Eating with a spoon is an excellent example of a skill that occurs frequently in the course of a day and across a variety of environments. A child can use a spoon to eat her cereal at breakfast, pudding at lunch, and soup at dinner. In addition, eating with a spoon can occur at home during breakfast, in the school cafeteria at lunch, and in a local family restaurant at dinner time.

Functionality

Does learning this activity increase the child's level of independence? Selecting functional activities usually ensures that the activities being taught will decrease the child's dependency on others in everyday routines. A functional activity is defined as a necessary activity which, if the child does not do, then

Putting on one's jacket is a functional activity.

someone else will have to do it for her (Falvey, 1989). For example, if a child does not learn to feed herself, someone will need to feed her. In contrast, if a child does not sort red blocks from green blocks, someone will not need to do this for her in order for the child to survive.

Chronologically Age-appropriate

The educational team should engage the child in chronologically age-appropriate activities and use chronologically age-appropriate materials. For example, Sara's mother wants her to learn her body parts. Can this activity be taught using age-appropriate materials? Although this may not be problematic with young children, it is important that the materials used with children with multiple disabilities be similar to those materials used by nondisabled chronological peers. For example, the nursery song, "Hokey Pokey" may be appropriate to facilitate the teaching of body awareness to a preschool child during circle time. It is not an appropriate song to teach body awareness for an adolescent student. Another example is having a cooking lesson in which the child is making bacon and eggs. Although the activity of cooking is chronologically age-appropriate, a menu of bacon and eggs is not. Sighted preschoolers do not typically cook or prepare food items that require using a stove.

Developmentally Appropriate

Although family priorities are the focus of the educational process, it is the responsibility of the teachers and therapists to exercise their professional judgment when determining goals and objectives for the child. Professional judgment includes determining whether the child can acquire the skills given the amount of time available. In addition, the educator needs to match the skills and task characteristics to the child's strengths and desires. For example, the parents of a child who is totally blind may want her to learn to read braille. Unfortunately, this particular child does not have the tactile sensitivity in her fingers and/or the hand control for tracking, due to additional disabilities such as cerebral palsy. Although a family request and priority, it is the responsibility of the educational team to identify the strengths and needs of this child to determine if braille is a viable option and establish alternate strategies. It may be that for this child the traditional teaching of braille for the purposes of reading independently is not realistic, but braille can be taught for more functional purposes (for example, labeling or marking items). See figure 5 for examples of targeted critical activities for a three-year-old child.

The Priority Checklist (see figure 6) will assist the educational team in targeting critical activities. List the identified activities in the columns and then answer each question based on a 3-point Likert scale (3=Strongly agree; 2=Agree; 1=Somewhat agree). Total the score for each activity. The items with the highest score should be those activities that the educational team addresses when developing the child's instructional program.

DISCREPANCY ANALYSIS

Once priority activities for instruction are determined, a discrepancy analysis is conducted for each activity (Falvey, 1989). This is done to determine both the positive and negative discrepancies in performance for each activity. Positive discrepancies exist when the child meets or exceeds the chronologically expected behavior. Negative discrepancies exist when the child's performance falls below the chronologically expected behavior.

Figure 5

TARGETING CRITICAL ACTIVITIES

Child Preferences

Accessible Natural Environments

Frequency of Occurrence

Functionality

Chronological Age-Appropriateness

Developmentally Appropriate

To begin a discrepancy analysis, each activity needs to be task analyzed or broken down into the specific skills needed to complete the activity (Nietupski & Hamre-Nietupski, 1987). After completing the task analysis for each activity, the teacher needs to identify those specific skills within the task analysis the child already possesses and those she does not. This usually involves members of the educational team observing the child performing the activity several times. These initial performance trials will establish a baseline and serve as a pretest. Since the goal is to determine what the child can and cannot do independently, she should not be reinforced or corrected when performing these trials. Figure 7 illustrates a discrepancy analysis and possible adaptations. These are the next topics discussed.

ADAPTATIONS FOR PARTICIPATION

Once a discrepancy analysis has been conducted and those skills that are missing from the child's repertoire are established, the educator must determine if an adaptation will assist the child in completing the skill, or whether or not to teach the specific skill to the child. For example, if Sam is unable to feed himself because he cannot hold onto a spoon, providing a simple adaptation like a spoon with a built-up handle may eliminate the difficulties that Sam is having grasping the spoon. In addition, there may be skills that some children with multiple disabilities may never be able to perform independently. For example, a child with severe physical involvement resulting in an inability to use her arms or hands may never be able to feed herself independently. However, she may learn the compensatory strategy of using a straw for soups, milkshakes, and juices.

There are a number of adaptations that can be used to compensate or supplement skills or allow for partial participation (Baumgart, Brown, Pumpian, Nisbet, Ford, Sweet, Mesina, & Schroeder, 1982). These include:

1. Skill adaptations, such as creating an adaptive device or aid or using existing adapted materials.

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Figure 6

PRIORITIZING WHAT TO TEACH

Directions: List each activity in the spaces to the right. Answer each question for each activity.
Ratings: 3 = Strongly agree 2 = Agree 1 = Somewhat agree 0 = Disagree

Activity								
Is this activity practical or functional?								
Is this activity chronologically age-appropriate?								
Is this activity a family priority?								
Is this activity motivating for the child?								
Is this activity achievable based on the child's development?								
Can this activity be taught in the child's natural environment?								
Does this activity occur frequently?								
Can this activity be taught in a familiar environment?								
Is this activity a priority for the instructional staff?								
Can this activity be taught safely?								
Total Score (Possible Total Score = 30)								

2. Activity adaptations, such as changing the way the activity is performed, changing the rules, and changing the routine sequence.
3. Personal assistance.
4. Social/attitudinal change.

Figure 8 lists the types of adaptations that can be used.

Skill Adaptation

Skill adaptation involves creating an adaptive device or aid to compensate or facilitate the child's ability to perform a specific skill; for example, by placing a bar of soap in a nylon and then tying the opposite end to the faucet. This adaptation allows the child to independently wash his hands by helping him locate the soap and eliminates the frustration of trying to hold the soap and wash his hands at the same time. Adding a tactile cue to a dresser drawer by tying a sock on the handle of the drawer helps the child locate his socks and increases independent dressing. Placing a dot on the right shoe helps the child distinguish which shoe goes on his right foot. Adaptations need not be expensive to be effective. Preference should be given to those adaptations that are simple and inexpensive.

One should consider the use of existing adapted materials such as beeper balls and hot water level indicators. Items like these are available from The American Foundation for the Blind or from Independent Living Aids. Both provide numerous adaptive devices specifically designed for the visually impaired population. Built-up handle utensils, inner lip plate, and other adaptive devices for individuals with physical disabilities are available from Fred Sammons, Inc.

Activity Adaptations

Changing the routine sequence of the activity may increase the child's ability to independently perform the activity. For example, deciding what to eat before going to a restaurant minimizes the time spent at the restaurant for a child who has difficulty sitting for long periods of time. Having a child brush her teeth while bathing eliminates any spilling problems resulting from poor fine motor control.

Changing the way the activity is performed is another type of adaptation. For example, having a child squeeze the toothpaste directly into her mouth rather than trying to put it on a toothbrush may facilitate a child with limited vision to achieve independence in this area.

Changing the informal or formal rules used to perform a specific activity is another type of activity adaptation. This particular adaptation applies when a specific game or sport is being played. For example, when playing hide-and-seek, have peers signal their location with noise-producing objects (e.g., bells, whistles) for the child who has severe vision field restrictions (Nietupski & Hamre-Nietupski, 1987).

Lastly, changing the physical environment by providing wheelchair ramps, lowering tables, widening doorways, or elevators that announce the different floors are usually expensive but sometimes necessary adaptations for a child to be truly independent in his environment.

Personal Assistance

Using personal assistance is the most intrusive of adaptations and therefore should be considered only after all other adaptations and strategies have been tried or none are feasible. Personal assistance incorporates the principle of partial participation (Baumgart et al., 1982) and is preferable to having a child excluded

Figure 7

DISCREPANCY ANALYSIS

Name John **Date** _____

Environment Home **Activity** Riding Bus to School

Natural Cues	Skills	Baseline Trial		Discrepancy Analysis	Adaptations
Mom says "time for school"	Child gets back pack	–	–	John does not get back pack	Put backpack at front door
Door closed	Child opens front door	+	+		
Curb and street	Child walks to end of drive way	+	+		
No bus	Child waits for bus	+	+		
Bus stops at house	Child walks to bus	–	–	John does not initiate movement to the bus	Bus blows horn
Doors close	Child waits for doors to open	–	–	John walks toward closed doors	Add visual cue to door
Doors open	Child steps up stairs holding rail	–	–	John steps up, but does not hold rail	Mark rail with fluorescent tape
Bus driver says take a seat and buckle up	Child locates empty seat	–	–	John does not display any scanning ability	Teach visual scanning
Empty seats	Child walks to empty seat	–	–	John can not find an empty seat	Teach visual scanning
An empty seat	Child sits down	+	+		
Seat belt	Child fastens seat belt	+	–	Belt twisted on the 2nd trial	Teach exceptions

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from an activity. Personal assistance involves another individual performing the skill for the child or providing the child with a level of assistance so the child can perform it. For example, if a child has a severe motor disability, a peer can carry the cafeteria tray for him to the table, or, after the child has selected milk instead of orange juice, the adult can put the straw in the cup and guide it to the child's mouth. In both these examples, the level of assistance should balance with the child being as actively involved in the activity as possible.

Social and Attitudinal Changes

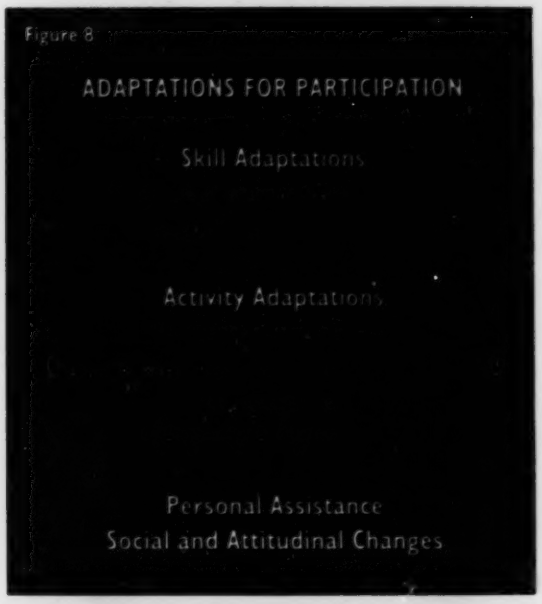
This last adaptation involves professionals assisting nondisabled peers to develop more tolerance and understanding about individual differences that peers with disabilities may exhibit (Nietupski & Hamre-Nietupski, 1987). For example, Todd may spill his food when feeding himself independently with a spoon. This behavior may not improve significantly over time due to his physical limitations. The nondisabled peers who eat with Todd need to develop an accepting attitude about him and not tease him because he eats differently.

In summary, there is a variety of adaptations that can be used to compensate or at least allow partial participation in activities for young children with multiple disabilities. These adaptations should be considered when the possibility exists that a child may not perform a specific activity independently. Educators and parents need to be creative and flexible when using adaptations since several different types of adaptations may need to be implemented before the most effective one is found.

FUNCTIONAL VISION ASSESSMENT

One of the primary responsibilities of a teacher certified in the area of visual impairments is to conduct a functional vision assessment on children who are low vision. This assessment identifies the child's visual strengths and needs in terms of visual functioning within his environment. The findings are used to determine the materials, instructional methods,

Figure 8



and environmental modifications required to enable optimal use of the child's vision in natural situations.

A functional vision assessment begins by reviewing the child's current eye report, any medical records, and interviewing the parents, teachers, and other individuals working with the child. This is followed by observations of the child in his home, school, and community. Although observing how a child looks at, reaches for, and manipulates objects is usually the primary method of gaining information about a child's functional vision, a child with multiple disabilities may require structured assessment procedures to elicit his maximum visual potential.

Langley (1980) has identified several visual behaviors to assess when working with children whose multiple disabilities include visual impairment. These visual behaviors include eye movement, visual field preferences, near and far distance abilities, and the integration of visual and motor skills.

Examination of eye movement includes observing the child's ability to fixate on nearby objects, the range of following horizontal, vertical, and random movement, and the coordination of the eyes. Assessing visual field

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preferences provides information about where materials should be positioned or introduced for a child to manipulate or scan them efficiently. Identifying defects in the child's visual field and observing whether the child prefers central or peripheral fields, or prefers his right or left eye are skills assessed in this area. Near-distance ability is assessed by having the child pick up objects of various sizes, such as cake decorations or Cheerios, reaching for stationary toys, and matching objects or pictures. Far distance ability is assessed by having the child track objects at various distances (5 to 10 feet). The integration of visual and motor skills involves assessing the child's ability to perform activities requiring both visual and motor skills, such as stacking one inch cubes or placing pegs in a pegboard. Specific guidelines for performing a comprehensive functional vision assessment for children with multiple disabilities can be found in Langley (1980), Langley and Dubose (1976), and Levack (1994).

Materials selected for use in a functional vision assessment should include light sources (penlights, novelty flashlights, strings of holiday lights), brightly colored objects, and patterned stimuli and faces (Langley, 1980). In addition, the most effective materials are usually those familiar to the child. These preferred materials may include favorite toys or common household objects such as a spoon, slippers, hair brush, or cup.

Positioning and handling should also be considered when working with children whose multiple disabilities may include physical disabilities as well as visual impairment. For example, a child with cerebral palsy may require symmetrical positioning to facilitate fixation and tracking responses (Langley, 1980). A child with poor head control may benefit from being placed over a wedge or bolster to facilitate her ability to look at and manipulate objects (Langley, 1980). Consultation with a physical therapist is recommended in these situations. Lastly, some children may be taking medication that can affect their vision (Harrell & Akeson, 1987). For example, phenobarbital, an anti-convulsant may dilate or constrict the pupils, increase random ocular movements (nystagmus), or constrict the visual field. Dilantin, a drug used to treat chronic epilepsy may decrease vision or increase nystagmus. Levack (1994) has a detailed list of medications and their side effects on vision. The teacher performing the functional vision assessment should know if the child is on any medication. This will allow her to adjust the assessment procedures and to minimize the impact of possible side-effects on the assessment results.

INSTRUCTIONAL PROGRAM

After instructional priorities have been established, ecological inventories conducted, and discrepancy analyses performed, the educational team should develop the instructional program to teach the child desired skills within the context of routine activities. These instructional objectives should focus on functional behaviors that emphasize natural performance criteria and include appropriate adaptations for participation. When developing the instructional program, specific goals and behavioral objectives need to be written. While goals can be general in nature, such as "Elizabeth will increase communication skills," objectives must be written in precise language. This is necessary so that anyone working with the child can read the objectives and know exactly what the child will be doing, under what conditions, and when the child has achieved the desired behaviors.

Behavioral objectives contain four components: specific learner, target behavior, condition, and degree or criterion for success. The first component is the identification of who is to perform the behavior: the specific learner. Objectives should be written for the learner and not for the teacher or what she will provide the learner.

The second component is the target behavior that is expected. Behaviors should be measurable and observable. Words such as "to know" or "to understand" are vague and should be avoided:

Example 1 "Elizabeth will name five articles of clothing..." *This example specifies the learner and a specific observable behavior.*

Example 2 "Elizabeth will be given the name of five articles of clothing..." *This example specifies what the teacher, not the learner, will do.*

Example 3 "Elizabeth will know five articles of clothing..." *This example is vague.*

This last example can also have different interpretations. Does this mean that Elizabeth can point to these objects when named or that Elizabeth can name these objects when presented?

The third component is the "condition" under what circumstances the behavior occurs. A condition can be the adaptations required, the level of assistance required, or the situation where the behavior occurs:

Example 1 "When presented with a T-shirt, pants, shoes, and socks while dressing, Elizabeth will name these objects..." *This example states the conditions.*

Example 2 "Elizabeth will name objects..." *This example does not state the conditions.*

Example 3 "When provided with a minimal physical prompt (e.g., a tap on the hand during snack time in the classroom), Elizabeth will pick up her cracker..." *This example states the conditions.*

Example 4 "Elizabeth will pick up her cracker..." *This example does not state the conditions.*

The final component of a behavioral objective is the degree or criterion required for success. Oftentimes this is given in percentages (i.e., with 90 percent accuracy) or ratios (four out of five times). Degree should not be limited only to accuracy indicators but can also include indicators of quality or fluency.

Example 1 "When setting the table, Elizabeth will name cup, plate, or spoon, when asked 'What's this?'..." *This example does not adequately specify the criteria.*

Example 2 "When setting the table, Elizabeth will name cup, plate, or spoon when asked 'What's this?' 100 percent of the time." *This example contains a percentage criterion.*

Example 3 "When setting the table, Elizabeth will name two out of three objects that she needs at mealtime." *This example contains a ratio criterion.*

Example 4 "When setting the table, Elizabeth will name cup, plate, or spoon when asked 'What's this?' so an unfamiliar individual can recognize the name." *This example contains a criterion that measures quality.*

Example 5 "When setting the table, Elizabeth will name cup, plate, or spoon when asked 'What's this?' within 15 seconds." *This example contains a criterion that measures fluency.*

Objectives that are written to include these basic components—specific learner, target behavior, conditions, and criterion—although technically correct may still be inappropriate if they are not also written to be functional and meaningful to the child (Billingsley, 1988). Functional behaviors increase the child's level of independence by reducing his dependency on others to engage in everyday routines. Meaningful activities are those performed within the context of daily routines:

Example 1 "Jameson will stack one inch cubes..." *This example is not functional.*

Example 2 "Jameson will put the blocks away at the end of play time..." *This example is functional.*

Example 3 "Jameson will put on a jacket when requested by an adult..." *This example is a functional but not necessarily a meaningful activity.*

Example 4 "Jameson will put on his jacket before going outside to play..." *This example is a functional and meaningful activity.*

Developing functional, meaningful, and technically correct instructional objectives is a major step in instructional planning. Effective instruction includes systematic direct instruction across natural situations, ongoing data collection of the child's performance, and continual evaluation and modification of instructional activities to meet the child's learning needs and to encourage progress to the child's optimal functioning.

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Chapter 4

Jamie Dote-Kwan

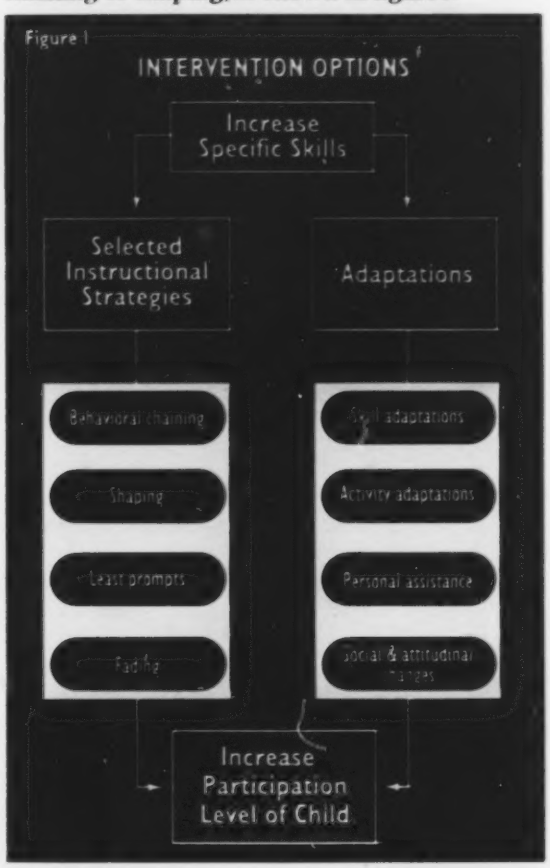
INSTRUCTIONAL STRATEGIES

There are a number of generic instructional strategies and practices that have been effective not only with young children with special needs but for all children (Cook, Tessier, & Klein, 1992). The first of these is providing motivation. As discussed in Chapter 2, identifying objects, individuals, and activities that are highly preferred by the child is a powerful key to learning. The second is social mediation of experience. This happens when an adult facilitates the child's understanding and ability to complete a task by translating the event verbally or physically as the child is experiencing it. The adult must be aware of the child's "zone of proximal development" (Vygotsky, 1978), or what the child can do with support—the next step from what he does independently. The adult can then provide the level of assistance that facilitates the child to complete the task successfully. A third generic strategy focuses on adult-child interactions and communication. As discussed in Chapter 5, this involves establishing turn-taking, using routines, encouraging choice-making, and other opportunities for communication.

Besides these generic strategies and principles, there are various strategies and principles (as discussed earlier in Chapters 1 and 2) that should be incorporated when working with young children whose severe multiple disabilities include visual impairment. These include: developing the senses; allowing time to manipulate objects and to explore material tactually; involving the child as an active learner by providing contingent stimulation; creating opportunities for choice-making, and so forth.

The focus of this chapter is identifying selected instructional strategies that are effective for working with young children whose multiple disabilities including visual impairment—specifically, children who are nonverbal, who do not exhibit pretend or symbolic play and whose primary intervention goal is to increase specific skills that eventually elevates their participation level in daily activities. In order to select the most appropriate intervention for these very challenging students, the educational team must determine whether to use an adaptation that will assist the child in completing the skill (see Chapter 3), or to teach specific skills through the use of various instructional strategies, such as behavioral chaining or shaping, as shown in figure 1.

Figure 1



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There are several factors that need to be considered when implementing an instructional program. First, it is important to teach skills in typical environments and natural contexts in a functional manner. For example, eating with a spoon should be taught at meal or snack time, and putting on a jacket should be taught near the closet or coat room, when the child is getting ready to go outdoors.

It is equally important to determine the primary instructional purpose of an activity (Nagaishi, 1993) because it is not possible to work on everything at the same time. If eating with a spoon is the goal of the activity, then the child should be positioned securely in the chair so he is not trying to maintain balance while attempting to use a spoon. If the goal for a child is maintaining his balance while sitting in his chair during music time, do not complicate this by introducing hand movements that add to postural demands.

The educational team needs to also consider the schedule and sequence of instructional activities (Nagaishi, 1993). High physical activities such as playing on the playground should be alternated with low physical activities such as circle time or story time. Within activities, consistency in how a particular skill is performed, materials used, and the words used to describe the skill or materials should also be stressed. Gathering all necessary materials and equipment before beginning the activity eliminates unnecessary waiting on the child's part.

Finally, after the child has mastered the skill in the instructional setting, it is important to teach the skill in a variety of environments. Children with multiple disabilities may have difficulty generalizing acquired skills from the instructional setting to new environments and situations. For example, Sara can wash her hands in the school classroom before eating lunch, but may not be able to wash her hands at home. Sara cannot perform this skill at home, because she was only taught to wash her hands in the school setting and under "school" conditions. This instructional process did not enable her to generalize the skill so she could perform it in a variety of situations. Sara may be confused by the differences in the home and school locations. There are disposable paper towels and a soap container attached to the wall at school, while at home the hand towel is on a hook and the bar soap is on the sink.

TASK ANALYSIS

After an activity has been selected, a task analysis should be performed. This involves breaking down the specific activity into small steps that are easily taught one at a time. The size of the task steps depends on the individual child, but generally the younger or more severely disabled the child, the smaller the recommended task step (Nietupski & Hamre-Nietupski, 1987). Figure 2 provides a task analysis example for putting on socks. When conducting a task analysis, it is very important to observe how sighted children of the same age would perform the task. Conducting a task analysis from an adult's perspective may lead to creating an analysis which may be more difficult for young children. For example, an adult puts on his pants by either standing or leaning against an object and balancing himself while holding open the top of the pants and lifting one leg at a time into the legs of the pants. In contrast, a preschooler will sit down on the floor, lay his pants flat on the floor, and slide the pants on.

Figure 2

TASK ANALYSIS: PUTTING ON SOCKS

1. Pick up sock
2. Hold top of sock by inverting both thumbs inside the sock
3. Pull sock over toes
4. Pull sock over heel of foot
5. Pull sock over leg until smooth
6. Repeat steps 1 - 5 for other sock

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TASK ANALYSIS

Putting on a Sweater

It is also important to know what is acceptable practice for adults who are blind or low vision so those adaptations can be included in the task analysis. For example, when brushing one's teeth, putting toothpaste on the toothbrush may be the appropriate procedure for sighted individuals but may be more difficult for individuals who are blind. Putting the toothpaste on one's finger or squeezing toothpaste directly into one's mouth are acceptable behaviors for adults who are blind and should be used. In addition, while touching one's food may be discouraged with sighted children, it is appropriate for blind children and adults to touch their food in order to identify and orient their location. Task analysis for activities should include accepted practices that are used by individuals with limited vision. The American Foundation for the Blind's *The Step-by-Step Guide* provides specific self-help skills that have been adapted for individuals who are blind.

ROUTINE

As discussed in Chapter 5, a consistent, predictable routine is essential in teaching functional skills. A daily routine is a series of activities that transition one into another. Activities do not occur in isolation, but flow naturally one to the other. For example, if someone is going to eat a meal, she decides on what to eat, prepares the meal, sets the table, eats the meal, clears the table, washes and dries the dishes, and puts them away. The series of events that surround an activity, including the activity itself, is called a routine. Teaching within routines allows the child to anticipate and transition from activity to activity, thereby maximizing independence. It is also important to provide a child with clear transition signals. This may be accomplished by saying and signing "ALL DONE" or "FINISHED," using a timer or a bell, or having the child involved in the cleaning up of an activity.

CHAINING AND SHAPING

Behavioral chaining is a procedure in which a child learns one step of a task analysis at a time until all the steps are acquired and the child completes the activity (Koegel & Schreibman, 1982). There are several types of chaining. In forward chaining, the child must master the first step before moving on to the next (Kayser, Billingsley, & Neel, 1986; Sulzer-Azaroff & Mayer, 1977). See figure 3 for an example of forward chaining for using a spoon.

In backward chaining the teacher performs the entire activity except the last step (Kayser, et al., 1986; Sulzer-Azaroff & Mayer, 1977). The child must complete the last step before the next step is introduced. The next time the child must complete the last two steps and so forth. This technique is usually effective since the child is pleased with the result and therefore motivated to perform the activity. See figure 4 for an example of backward chaining using a spoon.

A total task approach is a technique by which the child is taught the total activity, or all the steps simultaneously (Kayser, et al., 1986). Since the total task approach allows the child the opportunity to practice each step of the task analysis every time, this often produces quicker results and is a more natural way of teaching (Kayser, et al., 1986). Unlike backward chaining where the child is restricted to practice on the

steps mastered and progress only on the step being taught, the child can progress to each step of the task.

Figure 3

FORWARD CHAINING

Mary will

1. Grasp the spoon with dominant hand
2. Insert the spoon into the bowl of food
3. Scoop food with the spoon
4. Bring spoon to her mouth
5. Rotate the spoon towards the mouth
6. Insert spoon into mouth
7. Remove food from spoon using proper lip closure
8. Remove spoon from mouth
9. Place spoon in bowl

Figure 4

BACKWARD CHAINING

Mary will

1. After removing spoon from mouth, place spoon in bowl
2. After eating food from spoon, remove spoon from mouth
3. After inserting food into mouth, remove food from spoon
4. After rotating spoon towards mouth, insert spoon into mouth
5. After bringing spoon to her mouth, rotate spoon towards mouth
6. After scooping food with spoon, bring spoon to mouth
7. After inserting spoon into bowl, scoop food with spoon
8. After grasping spoon, insert spoon into bowl
9. Grasp spoon with dominant hand

Shaping techniques are effective instructional strategies when the child's current repertoire of behaviors does not include the targeted skill behavior. Shaping involves reinforcement of any successive approximation of a behavior (Snell & Zirpoli, 1987). For example, the child is learning to put on his socks. Initially, the child shows no interest in the sock. If the child happens to touch the sock, the adult would reinforce this behavior by saying "Good, you're getting your sock." The adult would then guide the child physically by using hand-over-hand techniques to have the child hold the outer edges of the sock between his thumb and forefinger of each hand. If the child touches the sock to his foot, but does not put it on his foot, the adult would still reinforce this attempt. In other words, the adult reinforces any attempts made at performing the behavior; in this case, touching the sock randomly or touching the sock to his foot. Although these are not the desired behavior, they are approximations to the desired behavior of picking up the sock and placing it on his foot.

NATURAL CUES AND INSTRUCTIONAL PROMPTS

Instructional prompts have been used quite successfully to enable students with severe visual and multiple impairments to acquire basic skills (Joffee & Rikhye, 1991). Researchers have utilized the system of least prompts as an instructional strategy that is extremely effective in teaching students with various disabilities, and at various ages (Doyle, Wolery, Ault, Gast, 1988). The system of least prompts strategy involves presenting a child with the natural cue; if an incorrect response or no response occurs, then the least intrusive prompt is provided and the child is given the opportunity to respond. If the child still does not perform correctly, the next prompt in the hierarchy is provided and then the next, until the child responds correctly. This sequence is more likely to support the child's active participation in the activity and is less likely to encourage prompt dependency.

There are two types of prompts: an instructional cue and a correction procedure. An instructional cue is any assistance given to

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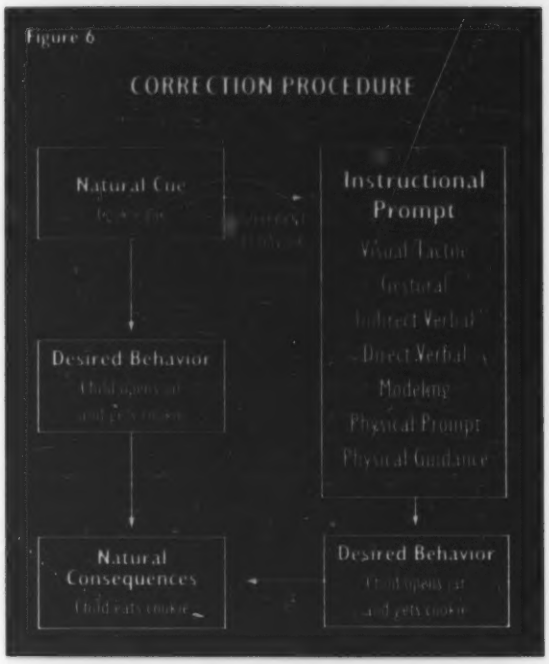
the child either added to or after the natural cue to bring about a correct response (Holowach, 1989). See figure 5 for a flow chart for using an instructional cue. When adding to the natural cue one should select cues that have a clear association with the activity or destination they represent (Joffee & Rikhye, 1991). For example, a spoon or pretending to eat can be used to represent the cafeteria or the activity of eating. Having a child touch a toothbrush can prompt the child to brush his teeth.

A consequence occurs after the child responds either correctly or incorrectly (Holowach, 1989). The natural consequence will reinforce or discourage the child's response. For example, if the child attempts to enter the grocery store through the IN automated door, she will be reinforced by the natural consequence of entering the store through the opened door. But if the child attempts to enter the grocery store through the OUT door, she will be discouraged by the natural consequence of not being able to enter the store.

When the natural consequences are meaningless because they do not change the child's incorrect response, the teacher needs to intervene with a correction procedure. For example, the child attempts to walk into the OUT door at the grocery store because he is unaware that it is not open. His teacher needs to correct this response by pointing out that the door is still closed. This can be accomplished by using an instructional prompt, such as the adult tapping on the door or saying "The door is closed." As with cueing, the least intrusive correction prompts should be used first to provide the child with the opportunity to respond. If there is no response or an incorrect response, then the next more intrusive prompt should be used (Doyle, et al., 1988). See figure 6 for a flow chart for using a correction procedure.

PROMPTING HIERARCHY

The following section provides a list of the prompt hierarchy going from natural cues to a series of instructional prompts as shown in figure 7. Natural cues are the most desirable because they do not require the teacher or an adult to be present for the child to perform a specific activity, and they promote generalization of learning. Physical guidance is the least desirable because it is more intrusive and offers less opportunity for active participation on the part of the child. The level of assistance required by a child will depend on the child's individual needs and is contingent



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on a sufficient waiting period to allow the child to respond independently (Downing & Eichinger, 1990).

A ***natural cue*** is something or someone generally available in the natural environment that elicits the desired response. For example, a child enters a dark room and the child automatically turns on the lights, or the bell rings at the end of the school day and the child gathers his things and lines up at the door to go home. Some individuals with severe disabilities have difficulty attending to the most relevant or salient features of natural cues (Ford & Mirenda, 1984). Therefore, natural cues should be selected based on the child's specific visual abilities and learning characteristics. The more salient the natural cue to the child, the greater likelihood the child will attend to it, and the faster the rate of skill acquisition (Ford & Mirenda, 1984). A ***within-stimulus*** prompt alters the natural cue to accentuate its critical features (Ford & Mirenda, 1984). This can be accomplished by outlining an object in a drawing or adding a braille label to help the child discriminate and identify the object. The adding of within-stimulus prompts to natural cues will often facilitate the visually impaired child's ability to perform a skill. For example, placing fluorescent tape around a hook in the coat closet will help him locate the hook to hang up his jacket. Marking his clothes with different tactile markings for each color will enable the child who is totally blind to identify clothes that match.

Figure 7

PROMPTING HIERARCHY

Natural Cue

Visual Tactile

Gestural

Indirect Verbal

Direct Verbal

Modeling

Physical Prompting

Physical Guidance

An indirect verbal prompt is an implicit verbal statement that requires the child to perform an action: for example, the adult would say "I sure am hungry, I guess it is lunch time."

A ***visual prompt*** is an object, picture, or drawing that elicits the correct response. Objects that are simple and small enough to be handled easily are usually best. Drawings or photographs can be used if the child has the symbolic skills to understand what they mean. In general, raised-line drawings or thermoform images of tangible objects are usually difficult for children who are blind and therefore should be avoided (Joffee & Rikhye, 1991). Some visual material may need to be adapted to facilitate use of remaining vision. For example, pictures can be enlarged or outlined to make them darker and bolder. See Bailey and Downey (1994) for ways to provide visual enhancements. Objects can be placed on contrasting backgrounds to make them easier to locate and identify.

A ***tactile prompt*** is used for children who have limited visual and auditory abilities, and information must be obtained through another modality. Tactile prompts presented in the natural environment are more effective in transferring learned skills across environments (Downing & Eichinger, 1990). For example, have the child feel the toilet paper dispenser (tactile) to cue the child to get off the toilet seat rather than an indirect verbal or a gestural prompt.

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Modeling is the demonstration of the desired response to get the child to imitate. If the child needs more assistance, the adult uses hand-over-hand and performs the activity coactively with the child.

A *gestural prompt* is a physical, nonverbal motion or movement indicating that certain actions should be performed (i.e., pointing to the lights in a dark room, pretending to eat). Before using any gestural prompts be sure that the child is attending visually. When a child is deaf-blind, it is essential to establish physical contact as a way of gaining the child's attention or providing reassurance (Tedder, Warden, & Sikka, 1993). Placing a hand on a child's shoulder or tapping the child's hand can announce one's presence, gain the child's attention, or inform the child that she needs to do something.

An *indirect verbal prompt* is an implicit verbal statement that requires the child to perform an action: for example, at lunch time if the adult wants the child to start eating his lunch, rather than saying to the child "Eat your lunch," the adult would say "I am hungry, I guess it is lunch time," or "I bet that banana tastes good."

A *direct verbal prompt* is a verbal direction or command that requires the child to perform an action. Using the example above, the adult would say "Turn the lights on" to the child entering the dark room. Both indirect verbal and direct verbal prompts generally are seen as less intrusive (Holowach, 1989). Both of these prompts do not require close physical proximity or physical contact and, in general, people tend to give verbal directions when interacting with one another.

Modeling is the demonstration of the desired response to get the child to imitate (Holowach, 1989). For example, an adult demonstrates to a child how to hang up a jacket on the hook in the closet. Some children with severe visual impairments may not be able to imitate an adult's behavior due to lack of or reduced vision. Another form of modeling must be used. The child can place his hand on top of the adult's hand(s) to feel the adult's model of the desired behavior (i.e., brushing one's hair). If the child needs more assistance, the adult uses hand-over-hand and performs the activity coactively with the child.

A *physical prompt* is a physical contact, from the subtlest tap on the hand to partially guiding the child through the task. For example, while eating with a spoon, a child may keep the spoon in his mouth after inserting it. The adult would touch the child's hand that is holding the spoon to prompt him to remove the spoon from his mouth and put it in the bowl.

Physical guidance is used when the adult's hand is placed over the child's hand in full physical contact through all of the desired response. The major difference between physical guidance and modeling is that in physical guidance the movement of the body is controlled by the adult, while in modeling the adult and the child are moving together or

A physical prompt is a physical contact, from the subtlest tap on the hand to partially guiding the child through the task.

In physical guidance, the movement of the body is controlled by the adult

coactively. The adult should try to always stand or sit behind the child when using hand-over-hand instruction, since the movement pattern is more natural.

FADING

Fading involves the gradual removal of prompts so the child can eventually perform the activity independently or with minimal assistance. This can be accomplished by using several strategies. First, the teacher reduces the number of prompts given at the same time when requesting a child to perform a single activity (Falvey, Brown, Lyon, Baumgart, & Schroeder, 1980).

Example

It is time to go home and the teacher announces, "Everybody get your things and line up at the door." Initially a child may require this verbal prompt and a physical prompt of his teacher tapping him on the shoulder and the gestural prompt of the teacher pointing to the closet before he initiates a response. After several instructional trials and the child is completing the activity successfully, the teacher would remove the physical prompt of tapping him on the shoulder. If the child continues to perform the activity successfully, the teacher would then remove the gestural prompt of pointing to the closet.

Fading by reducing number of prompts

Trial 1	►	Trial 5	►	Trial 10
Verbal prompt Gestural prompt Physical prompt		Verbal prompt Gestural prompt		Verbal prompt

Another strategy for fading prompts is for the teacher to reduce the level of assistance. When initially teaching a child to use a spoon, an adult may provide physical guidance by having the adult's hand totally around the child's hand and utensil and then bringing the spoon to the child's mouth. As the child gains competence and can grasp the spoon, the adult can lightly guide with her hand and gradually fade the physical assistance to the child's wrist. As the child continues to increase her competence, the adult may only need to physically prompt her by touching her hand.

Fading by level of assistance

Trial 1	►	Trial 5	►	Trial 10
Physical guidance Adult's hand over child's hand, directing child's movement		Physical prompt Adult's hand is on child's wrist; child is holding spoon, but adult is directing the movement		Physical prompt Adult lightly taps child on hand and child performs

The fading of prompts should not begin until the child is performing the skill at an acceptable level (Falvey et al., 1980). It is also critical that the child continue to perform the skill at this acceptable level during the fading process. If the child begins to regress in her level of performance then it is possible the prompts were removed too abruptly or before the child had really mastered the skill. Finally, since the goal of any instructional program is to increase a child's level of independence in the natural environment, it is essential that teachers and parents fade their instructional reinforcements gradually. Initially, whenever a child performs a new skill, she is reinforced verbally by the teacher or parent. If a child picks up the spoon, scoops, and brings the food to her mouth, the adult reinforces this behavior positively by saying "You did a great job," or "I like the way you're eating." This type of verbal reinforcement needs to be faded so the natural consequence (getting something to eat) will eventually reinforce and maintain the behavior. This can be accomplished by requiring the child to do more each time before providing the reinforcement. For example, initially the child is reinforced verbally each time she brings the food to her mouth. After several successful

Figure 8

DATA COLLECTION BY PROMPTING HIERARCHY

Scoring 0 = Did not perform; 1 = Physical guidance; 2 = Physical prompting; 3 = Modeling; 4 = Direct verbal; 5 = Indirect verbal; 6 = Gestural prompt; 7 = Visual/tactile prompt; 8 = Natural cue

Name Maria

Environment Cafeteria at First Street School

Activity/Skill Eating lunch using a spoon

Steps	10/3	10/6	10/9				
1. Grasp the spoon with right hand	7	7	7				
2. Insert the spoon into the bowl of food	4	4	4				
3. Scoop food with the spoon	1	1	1				
4. Bring spoon to her mouth	1	2	4				
5. Rotate the spoon towards her mouth	1	2	2				
6. Insert spoon into mouth	5	7	8				
7. Remove food from spoon using proper lip closure	8	7	8				
8. Remove spoon from mouth	8	8	8				
9. Place spoon back in bowl	2	2	4				
Total Score Achieved / Total Score Possible	37/72	40/72	46/72				
Percentage	51%	56%	64%				

trials, the child gets reinforced for every other successful trial, then every third, then every fourth, and so forth.

When fading prompts, the teacher must be diligent and keep accurate records related to the child's progress. (See figure 8 for an example of a data collection sheet that is partially completed.) This record sheet should identify the environment, activity to be performed, a list of the steps or skills required to perform the activity, and a record of the child's performance. The data collection sheet allows the teacher to record the specific prompt required for each step of the activity for the child to perform, and the percentage of accuracy.

ENHANCING VISUAL FUNCTIONING

A thorough assessment of a child's environment is necessary, whether the teacher certified in the area of visual impairments is providing direct service or consultation to a child whose multiple disabilities include visual impairment. This will facilitate the teacher's ability to make suggestions for managing the environment, targeting visual behaviors, and developing teaching strategies for improving skills (Kelley, Davidson, & Sanspree, 1993). This assessment should begin with a functional vision assessment (see the section on Functional Vision Assessment in Chapter 3), which identifies the child's visual strengths and needs in term of visual functioning within his environment.

Assessment findings should be used for necessary material adaptations and environmental modifications to enable optimal use of the child's vision in natural situations. In addition, these results identify basic visual skills or behaviors that the child is not demonstrating at a sufficient level to assist performance (Downing & Bailey, 1990). Hall and Bailey

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(1989) divided visual behaviors into three categories: visual attending behaviors (i.e., fixating, shifting gaze, searching for an object); visual examining behaviors (i.e., identifying pictures and people, matching objects and pictures); and visually guided motor behaviors (i.e., reaching for a toy, imitating movements).

Hall and Bailey (1989) further identified three types of instructional approaches to teach children to use these visual behaviors. In the first approach, *visual environment management*, the environment is organized to encourage the desired visual behaviors such as attending, examining, or visually guided motor behaviors. Objects and tasks are predetermined by the adult, but selected based on the child's interests, capabilities, and instructional needs. Since the environment is designed to motivate the child to initiate interactions, the child's activities are self-directed and inherently reinforcing. For example, a child who prefers toys that make sound, and yellow objects, is given a yellow cylinder-shaped container with blocks inside and placed on a dark mat or rug on the floor. Then, the child is encouraged to play with the container. The child may pick up the container and shake it. He may roll the container on its side and follow its movement across the floor.

An Example

VISUALLY DEPENDENT TASK TRAINING

An example of this approach would be teaching a young child with multiple disabilities to put on her jacket:
It is time to go home and the other children are putting on their jackets. Erin is standing in front of the closet. The adult prompts Erin to look for her jacket in the closet, then assists her to reach for it using the system of least prompts (as discussed earlier), and then provides her with a reinforcement such as praise. The adult will gradually decrease the level of assistance as required until Erin can reach for her jacket independently.

The second approach, *visual skills training* involves the teaching of specific visual attending behaviors (i.e., fixating on or scanning for an object) through operant conditioning procedures. This approach can be incorporated into everyday routines. For example, a three-year-old child with limited cognitive abilities and light perception would be taught to look for three seconds at a light source which highlights a cracker. The instructor would provide the natural reinforcement of the cracker. This approach would incorporate shaping and fading strategies as discussed earlier in this chapter. Although visual attending behavior is an important first step, use of visual skills training is beneficial primarily to young children whose visual systems are still developing (Levack, 1994). Even with this population, the goal should be to move to the next level; i.e., teaching the child to use his vision to examine and act on materials (Levack, 1994).

The next level is the final instructional approach identified by Hall and Bailey. *Visually dependent task training* involves selecting tasks that encourage visually guided motor and visual examining behaviors. An activity is selected and the visual behaviors required to complete this activity are identified. The child is introduced to the activity and encouraged to perform the desired visual behavior. The adult provides appropriate prompts and reinforcement. This approach would also incorporate the strategies of chaining, shaping, and fading.

Regardless of the instructional approach selected, visual behaviors should be taught during meaningful activities across a variety of natural situations. A child with multiple disabilities and low vision will not learn visual tracking skills in a meaningful way by tracking a light in a darkened room. The teacher certified in the area of visual impairments should identify meaningful activities during the day where this child could practice tracking (Downing & Eichinger, 1990). Tracking his spoon when eating, or tracking a ball across the play yard provide meaningful practice of this

skill. Goetz and Gee (1987) incorporated the teaching of vision use with daily activities. They have identified specific steps that include:

1) Determining if vision is necessary for performing an activity;

2) Determining what visual skills are needed;

3) Identifying critical moments to use vision within the activity; and

4) Developing intervention strategies to teach the desired visual skills.

This sequence may need adaptation according to the child's diagnosis. For example, many children with cortical visual impairment seem to look away at the critical moment (Levack, 1994).

There are several strategies for developing functional vision within daily activities for children whose multiple disabilities include visual impairment (see Downing & Bailey, 1990; Efron & Duboff, 1990; and Tavernier, 1993). Accentuating the visual characteristics of the task is one such strategy for teaching visual skills. This is done by illuminating the object with a flashlight or penlight, providing highly contrasting backgrounds, or enlarging the materials to elicit the child's attention (Tavernier, 1993). Another strategy is auditory referencing, or pairing an auditory cue with the object (e.g., tapping the spoon on the bowl) to encourage the desired visual behavior (Downing & Bailey, 1990). Making the completion of an activity contingent on a specific visual response from the child is also an effective strategy when working with children whose multiple disabilities include visual impairment. For example, a child wants something to drink and the adult puts the juice and milk containers on the table in front of the child. The adult would then wait until the child visually attended to both containers and has shifted his gaze to the container of his choice before pouring the child something to drink.

CREATE AN ENVIRONMENT THAT ENCOURAGES ACTIVE PARTICIPATION

Besides intervention strategies and adaptations related to visual needs, the environment should be designed to encourage child-initiated, child-directed, and teacher-supported play. Research supports the effectiveness of play-oriented environments for children with severe disabilities to teach motor, communication, and cognitive skills as well as to increase social interaction with peers and adults (Hanline & Fox, 1993).

Provision of centers inside the classroom that allow children to participate at various levels of play (i.e., construction, symbolic, or sensorimotor) and a variety of activities outside the classroom (water play, sand play, tricycling, climbing) are important elements of a play-oriented environment (Hanline & Fox, 1993). Arrange the furniture and equipment to allow easy access and to promote interactive play. For example, placing toys on lower shelves and changing the floor texture with carpet or tile allows the child access and helps her locate toys and play areas. Placing the sand or water table in the center of an area, rather than against a wall, promotes interactive rather than exclusionary play. The teacher needs to use systematic instruction embedded in play activities of the child's choice and to schedule sufficient time for the child to engage in play.

An Example

SYSTEMATIC INSTRUCTION

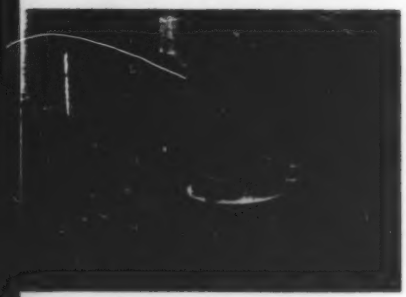
Timothy is learning to locate, reach, and grasp objects with his hands. During indoor time, he can locate, reach, and grasp blocks while making a tower with a friend. During outside play, he can locate, reach, and grasp the shovel while playing in the sand box. During circle time, he can locate, reach, and grasp a bell to make music while the other children are playing instruments. In each of these instances Timothy's target skills (i.e., use of functional vision or manual search) have been incorporated within the contexts of play activities and in the natural routine of the school day.

Finally, intervention should be aimed at facilitating normal tone and inhibiting atypical tone and patterns of movement through proper positioning and handling. Children with physical disabilities will need a physical or occupational therapist to recommend specific techniques for positioning, transporting, and movement requirements for eating, dressing, and toileting (see Chapter 7).

ENVIRONMENTAL CONSIDERATIONS

Tables and chairs for the child should be appropriate for the child's size and level of motor and visual functioning. Be sure to examine the chair height, seat depth, and table height in relationship to the child. The child should be seated with his feet flat on the floor, his torso at a right angle to his upper legs, and his elbows above the table. A child with multiple disabilities may need special adaptations, special chairs, or careful positioning. In this case, consultation with an occupational therapist or a physical therapist is highly desirable.

The room should be free of unnecessary obstacles or clutter...



...rather than the child being fearful of tripping over things.

1) The room should be free of unnecessary obstacles or clutter so that a child can move about freely and safely without fear of knocking or tripping over things.

2) Since some children with multiple disabilities may be very sensitive to stimuli or highly distracted, it is important to survey the environment for extraneous sounds and noise. This may include the general noise level in the room, low hums from air conditioning or electronic devices (i.e., computers, copying machines, etc.), and noise from the playground. Sound-dampening walls, acoustic tile ceilings, and carpeted floors help absorb sound and reduce excessive reverberation of noise (Rikhye, Gothelf, & Appell, 1989).

3) Within the workspace, it is essential to present materials in an organized manner. Use trays, boxes, and dividers to define space and help children to organize their drawers or cupboards.

4) Positioning of materials to increase the child's success and independence should be based on optimal visual and motor functioning. The placement of materials at a certain height, distance, and angle may be essential to accommodate a specific child's visual functioning, maintain postural control, or inhibit abnormal muscle tone (Nagaishi, 1993).

5) Supplies and materials (e.g., clothing, crayons, toothpaste and toothbrush) should be left in consistent and easily accessible locations so that the child can find them independently.

6) Sometimes it may be necessary to add a tactile cue (braille labels, thermoform representations, or tangible symbols) to the environment so the child can locate items (Rikhye, Gothelf, & Appell, 1989). For example, tying a sock on the handle of the drawer of his dresser where his clothes are located may assist the child in locating the drawer containing his socks and underwear.

7) Mark pathways by using carpet runners, varied floor surface, or room dividers, and provide landmarks (furniture or tactile cues) to facilitate orientation and mobility (Rikhye, Gothelf, & Appell, 1989).

8) Individualized and adjustable lighting can promote optimal use of vision. Lighting requirements may differ for children based on their specific etiologies. For example, a child with myopia may require high levels of illumination, while a child with albinism may be photophobic or light sensitive.

A low vision child's ability to locate, identify, and organize objects is facilitated by providing high contrast between objects and work surfaces.

Besides the traditional environmental consideration of illumination, one must also examine space, contrast, color, and time when working with young children with low vision (Pogrund, Fazzi, & Lampert, 1992). One needs to consider space between objects when working with young children with low vision. Simple, uncluttered patterns are more easily distinguished than complex, cluttered patterns. When providing choices for young children, it is important not to place objects too close together. This facilitates the selection of toys and eating utensils.

A low vision child's ability to locate, identify, and organize objects is facilitated by providing high contrast between objects and work surfaces. Black and white usually provide the greatest contrast, but other color combinations may be suitable depending on the child's specific visual needs. Contrasting place mats on the table helps the child define his eating area. Whenever possible, use dark colored dishes for light colored foods such as cereal and milk, rice, and vanilla pudding. This helps the child with low vision locate the food item and facilitates in scooping or piercing of food items. When working on art projects, white glue placed in a dark colored pie tin, or dark food coloring added to the glue and then placed on a white paper plate will help the child locate the glue and increase his ability to perform the given task independently.

Presentation of objects or activities should be adjusted to allow ample time for response. Reduced vision, medication, or processing problems may decrease the specific response rate of a child (Brennan, Peck, & Lolli, 1992). Objects and activities that are presented too quickly may decrease the child's ability to recognize the object or follow the steps of the activity.

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Chapter 5

Deborah Chen

UNDERSTANDING AND DEVELOPING COMMUNICATION

Many children with severe and multiple disabilities have very limited or virtually no language. This limitation reduces a child's access to information, restricts knowledge about what's going on, hampers participation in many activities, and at the same time increases the child's dependency on others. In general, we tend to communicate less with multiply disabled children who do not use words or gestures for communication than we do with those children who have that ability. In addition, some programs for children with severe and multiple disabilities have eliminated the expectation of or need for communication between adult and children by conducting daily tasks in an expedient and regimented way (Halle, 1984; MacDonald, 1985). In these situations, children learn that they have no control over people or events and may demonstrate symptoms of learned helplessness (Seligman, 1975).

COMMUNICATIVE BEHAVIORS

The first step in developing communication with nonverbal children is to identify and interpret behaviors as communicative. Before they develop words, all children communicate in many ways: through facial expression, gaze or orientation, body posture and movements, by touching, reaching for, pointing to objects or people, and through gestures that refer to actions on objects. They use crying, laughing, babbling, vocal play, and jargon to express themselves. They also use socially inappropriate behaviors to communicate such as screaming, crying, and hitting others.

Identifying the child's repertoire of communicative behaviors is the first step in assessing communication. Several forms of nonverbal or nonsymbolic communication (Stillman & Seigel-Causey, 1989) are listed below, with examples for a child who is blind or visually impaired:

Generalized Movements and Changes in Muscle Tone

- Calms down and relaxes in response to being comforted
- Moves excitedly in response to stimulation
- Quiets or stills in response to sounds in the environment (e.g., the behavior of other blind children who are listening)

Vocalizations

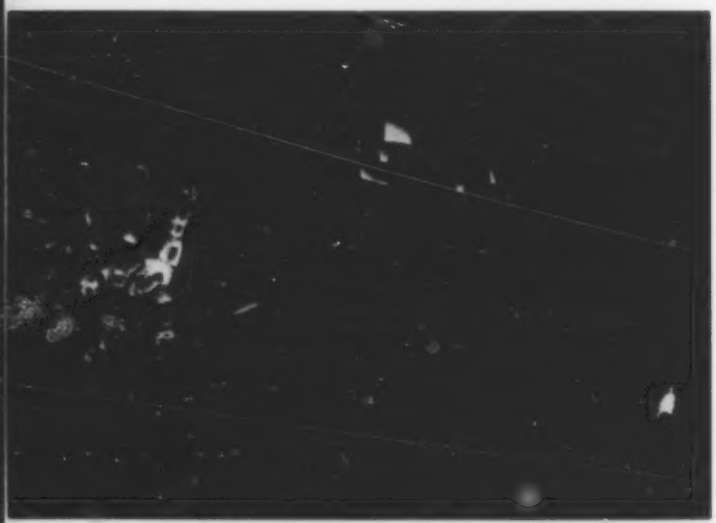
- Laughs in response to a preferred stimulation
- Cries in response to a disliked stimulation
- Makes sounds to get attention

Facial Expressions

- Frowns or grimaces in response to disliked stimulation
- Smiles in response to preferred person, object, or event

Orientation

- Looks, points, or moves toward a person, object, or event to get attention or to indicate interest
- Looks or turns away from person, object, or event to indicate refusal or rejection (orientation should be interpreted for individual children. For example, looking away may actually indicate interest since some children may see best when their heads are turned because of a central vision loss, or they may be trying to localize sound, or their turning away may be an involuntary reflexive movement in children with cerebral palsy.)



Example of depictive action: Shows hands to indicate "Wanna wash hands" and then rubs them together.

Pause

- Stops movement in anticipation that something is going to happen
- Waits for adult to take a turn

Touching, Manipulating, or Moving with Another Person

- Holds on to an adult for comfort
- Directs an adult's hand to object
- Touches or pulls on an adult for attention
- Pushes away to terminate interaction
- Follows the movements of an adult

Acting on Objects and Using Objects to Interact with Others

- Gets an object and activates it or pushes it away and discards it to indicate interest or disinterest
- Shows or touches an object to request attention or action
- Extends hands to take an offered object

Assuming Positions and Going to Places

- Stands on an adult's feet to initiate a "walking game"
- Goes to the door to request to go outside
- Stands by the water fountain to request a drink

Conventional Gestures

- Waves to indicate "bye-bye"
- Nods to indicate "yes"
- Shakes head to indicate "no"

Depictive Actions

- Moves body back and forth to indicate "want to swing"
- Makes chewing movements with mouth to indicate "want food"
- Approximates sounds of objects or animals to refer to them
- Draws pictures to request or describe activity

Withdrawal

- Pulls or moves away to avoid situation
- Lies on floor or falls asleep to avoid situation
- Pokes eyes and rocks back and forth

Aggressive and Self-injurious Behavior

- Scratches, bites, hits or spits at adult to protest action or indicate frustration
- Throws or destroys objects to protest action or indicate frustration
- Bites, pinches, hits self to protest action, indicate frustration, or in response to discomfort or pain

PURPOSE OF COMMUNICATION

The next step is to determine the communicative purpose or functions of these nonverbal behaviors. Bruner (1981) has identified three early communicative functions as: behavior regulation or getting others to do or stop doing something; social interaction or getting the attention of others; and joint attention or getting others to attend to an object or event. The following examples are based on observations of children with severe disabilities (Siegel-Causey & Wetherby, 1993)

with additional considerations for the communicative behavior of children who are blind:

Behavior Regulation—Getting Others to Do or Stop Doing Something

Protest, Refusal, and Rejection

- Cries in response to object being taken from hands
- Throws away disliked object
- Pushes adult's hand away when offered a disliked object

Request for Object or Action

- Opens hand in anticipation
- Manually searches for an object
- Gives an object to another person to activate or open it
- Gets a backpack to indicate "want to go home"
- Moves body back and forth to indicate "more swing"

Social Interaction—Getting the Attention of Others

Request Social Routine

- Pulls up shirt to request "more tickle on tummy"
- Positions self in front of an adult to indicate "more rough-and-tumble play"
- Puts scarf on head to request "more peek-a-boo"

Request Comfort

- Snuggles into an adult's chest while being held when upset
- Orients body towards an adult to get comforted

Figure 1

COMMUNICATIVE FUNCTIONS

Name Mary **Date** September 20, 1994

Observer/Interviewer Teacher **Informant** Parent

Communication Behaviors	Protest	Refusal	Rejection	Request for Object	Request for Action		Situations
Generalized movements	√				√		When being picked up
Changes in muscle tone	√				√		When held
Vocalizations	√	√	√				Cries during doctor's visits
Facial expressions							
Orientation					√		Leans towards mom to be picked up
Touching another person							
Manipulating/moving with another person							
Acting/using objects							
Assuming positions							
Going to places							
Conventional gestures							
Depictive actions							
Withdrawal							
Aggressive/self-injurious behavior	√						Bites hand when dislikes activity
Other: Echolalia							
One word speech							
One word sign							
Combined words							

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Opportunities to indicate preference for favorite activities increase a child's communicative efforts.

- Raises arms to get picked up and held

Request Permission

- Holds up a cookie and waits for permission to eat it
- Stands by the door and waits for permission to open it and go outside

Greet

- Waves "bye-bye" or "hi"

Call

- Tugs on adult to get attention
- Vocalizes to get adult's attention

Show Off

- Makes a silly sound and laughs to elicit adult reaction
- Repeats a behavior that elicited adult attention

Joint Attention—Getting Others to Attend to an Object or Event

Comment on Object or Action

- Shows or gives toy to an adult
- Points to picture or taps object with naming intonation

Request Information

- Points to picture or taps object with questioning

Expression/Intonation

- Turns over and shakes box with questioning expression/intonation

Research with children with severe and multiple disabilities indicates a predominant use of behavior regulation functions and limited use of joint attention functions (Cirrin & Rowland 1985; Wetherby, Yonelas, & Bryan, 1989). Figures 1, 2, and 3 provide a format for identifying and recording a child's communicative behaviors and their functions. The format includes nonsymbolic behaviors, echolalia, single words, and combined words. This information is needed in order to develop appropriate instruction that matches, supports, and builds on the child's communication efforts. Figure 1 illustrates a child who communicates to regulate the behaviors of others. Figure 2 shows a child who wants the attention of others. Figure 3 presents a child who is communicating to draw attention to an object or event. These figures demonstrate that a child's communicative behaviors have to be interpreted within the context that they occur and by people who are familiar with the child.

CREATING A NEED FOR COMMUNICATION

Research with children whose multiple disabilities include visual impairment has identified instructional strategies that increase their communicative efforts (Goetz, Gee, & Sailor, 1985; Rowland & Schweigert, 1993). These strategies involve environmental arrangements that include using meaningful and motivating materials/activities, providing choice-making opportunities, and creating situations in which children need help (Kaiser, 1993). The strategy of choice-making opportunities was discussed previously in Chapter 2. The strategies of using motivating activities/materials and creating a need for the child to act or request assistance are demonstrated in the following sequence. These familiar activities provide frequent opportunities for working on the behavior

regulation function of (a) request for object, or (b) request for action, or (c) the social interaction function of request for social routine:

1. Select a favorite activity
   (a) Eating peanut butter on crackers
   (b) Swinging
   (c) Tickle game
2. Create a need for the child to act by keeping required objects out of reach, for example:
   (a) By not opening the peanut butter jar in advance
   (b) By not having the swing seat attached to the chains in advance
   (c) By interrupting the ongoing pleasurable activity
   (d) By ceasing to push the child on the swing
   (e) By ceasing to tickle the child
3. Stop, wait, and observe the child's response: What does the child do?
4. Interpret the child's behavior as communicative
   (a) Whines or taps lid of peanut butter jar to ask "open jar"
   (b) Puts adult's hand on swing to request help in attaching the seat or rocks body back and forth to indicate "more swing"
   (c) Wiggles and kicks legs to ask for "more tickle"
5. Verbalize the child's communications and respond accordingly
   (a) "Turn the lid. Lid off. Open peanut butter."
   (b) "Want to swing"

Figure 2

COMMUNICATIVE FUNCTIONS

Name Joe **Date** September 4, 1994

Observer/Interviewer Teacher **Informant** Parent

Communication Behaviors	Request for Social Routine	Request Comfort	Request Permission	Greet	Call	Show Off	Situations
Generalized movements							
Changes in muscle tone							
Vocalizations					√		Makes sounds to get attention
Facial expressions						√	Makes faces and laughs
Orientation							
Pause							
Touching another person							
Manipulating/moving with another person							
Acting/using objects	√						Gives slinky to brother for pull game
Assuming positions							
Going to places			√				Stands by door to go outside
Conventional gestures				√			Waves when mom leaves room
Depictive actions						√	Makes bouncing movement & giggles
Aggressive/self-injurious behavior							
Other: Echolalia							
One word speech							
One word sign	√						Signs MORE for tickle
Combined words							

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(c) "More tickle"

6. Continue the activity

Repeat the sequence when interruptions can be made naturally. For example, it would be very odd as well as frustrating to take the child off the swing and dismantle the seat from the chains in order to encourage the child's communication. However, it would be very natural to stop pushing the child on the swing to elicit a request for more swinging.

As appropriate for the child and activity, symbolic communication forms (speech, signs, photographs and drawings, miniatures or pieces of objects) can be introduced and paired with the child's nonverbal or nonsymbolic communication forms. For example, if the child puts the adult's hand on the chains to indicate the need to attach the swing seat, the adult could say "Want swing" and show the child a picture of the swing with seat attached, help the child point to the picture, and attach the swing seat. Or if the swing stops and the child rocks back and forth to indicate "More swing," the adult can say and sign "MORE," and help the child make the sign, then swing the child.

TURN-TAKING

Developmental research and work with children with severe communication delays have concluded that interactive turn-taking or give-and-take skills within the context of social play appear to be critical to the development of communication (Bruner, 1981; MacDonald & Gillette, 1986). In programs for young children with multiple disabilities, interactive turn-taking can be used across all learning activities, such as stacking blocks, choosing snacks, singing songs, or making sounds. Turn-taking requires responding to the child's behaviors as communication and then allowing the child to respond. This creates a foundation for developing conversation. ***Progressively matched turn-taking*** (PMTT) is an intervention principle developed by MacDonald and Gillette (1986) which guides an adult to take turns with a child by matching what the child does and adding a bit more. The purpose is to show the child that he is communicating and to use what he uses (actions, sounds, or words) and provide one step beyond that. For example, if the child stacks up and knocks down blocks, the adult provides the appropriate sound "Kaboom" for the action. If the child makes sounds ("Kaboom") while he knocks down a stack of blocks, then the adult provides the words

Figure 3

COMMUNICATIVE FUNCTIONS

Name Elizabeth **Date** September 30, 1994

Observer/Interviewer Teacher **Informant** Parent

Communication Behaviors	Comment on Object	Comment on Action	Request Information				Situations
Vocalizations	√	√	√				Makes sounds and looks at adult
Touching another person	√						Vocalizes and touches sibling
Manipulating/moving with another person	√						Moves adult's hand to touch toy
Acting/using objects			√				Puts necklace on and off (repeats)
Conventional gestures			√				Waves and signs DADDY
Depictive actions		√					Smacks lips after taking a bite
Other: Echolalia							
One word speech							
One word sign			√				Points to picture, signs, looks at adult
Combined words							

"Blocks down" for the sound. If the child says words ("Blocks down") then the adult expands this to "Knock blocks down."

PMTT is an important strategy because young children seem to learn best from models that are close to their level of communication (Bruner, 1983). The key to using PMTT seems to be to interact with the child frequently, playfully, and spontaneously across everyday routines so that the child develops an expectation of give-and-take when he is with other people (MacDonald & Gillette, 1986). Interpreting the child's actions and behaviors as communication teaches the child that what he does can cause things to happen.

Play routines or predictable sequences provide opportunities for give-and-take and to introduce new information within these familiar contexts; for example, singing while doing "This is the way we wash our hands" and changing tasks such as "Put on our shoes," and "Pick up the blocks." In this way, words are provided for what the child is doing.

ECHOLALIA

Some children participate in turn-taking by constantly repeating or echoing what they have just heard. This repetition or echolalia is a frequent characteristic of the language of children who are blind (Anderson, Dunlea, & Kekelis, 1984; Evans & Johnson, 1988). Talking to echolalic children who are blind requires specific conversation strategies. These include: (a) acknowledging and expanding on the child's language, (b) responding to the feelings and ideas behind the child's words, (c) using objects to support the conversation topic, and (d) modeling what the child's response might be (Chernus-Mansfield, Hayashi, & Kekelis, n.d.). Another strategy is to talk in such a way that echolalic responses might seem like appropriate turns (Field, n.d.):

Avoid using verbal directions, comments, questions, and greetings that will sound strange if repeated by the child: "Good for you," "Bye, Mary," and "Put your shoes on."

Use words that would be appropriate if the child said them: "Hurray," "Bye," and "Time to get shoes on."

Omit pronouns and use names if the child confuses "I" and "you," "my," and "your."

Use "I" when participating in shared activities: "I hear music."

Vary what is said each time about a particular event: "Time for the bus," "The bus is here," and "Let's go to the bus."

Use a "fill in the blank" method when trying to get information and avoid using questions: "Mary played outside. Mary climbed on the_____," "Time to get coats, time to go _____." Use carrier phrases to "jump start" the child's communication.

AUGMENTATIVE AND ALTERNATIVE COMMUNICATION

Many children whose multiple disabilities include visual impairment are nonverbal and do not respond to spoken communication. These children need alternative communication systems and other ways to convey needs, wants, and feelings. There are two main types of augmentative and alternative communication systems (AAC): aided systems require equipment such as a computerized device or objects, photographs, picture or symbol cards or boards, while unaided systems use hand or body movements for communication such as gestures and sign language (Miller, 1993).

Electronic Aids

These include tape recorders controlled by microswitches and high technology devices such as personal computers (Miller, 1993). Microswitch technology has been used systematically with children whose multiple disabilities include vision and hearing impairments. These children learned basic communication skills including getting attention, making requests, or conveying interests and making choices and expressing preferences (Schweigert & Rowland, 1992). For example, tape recorded messages of common requests or comments can be controlled by an

Many children whose multiple disabilities include visual impairment are nonverbal and do not respond to spoken communication. These children need alternative communication systems and other ways to convey needs.

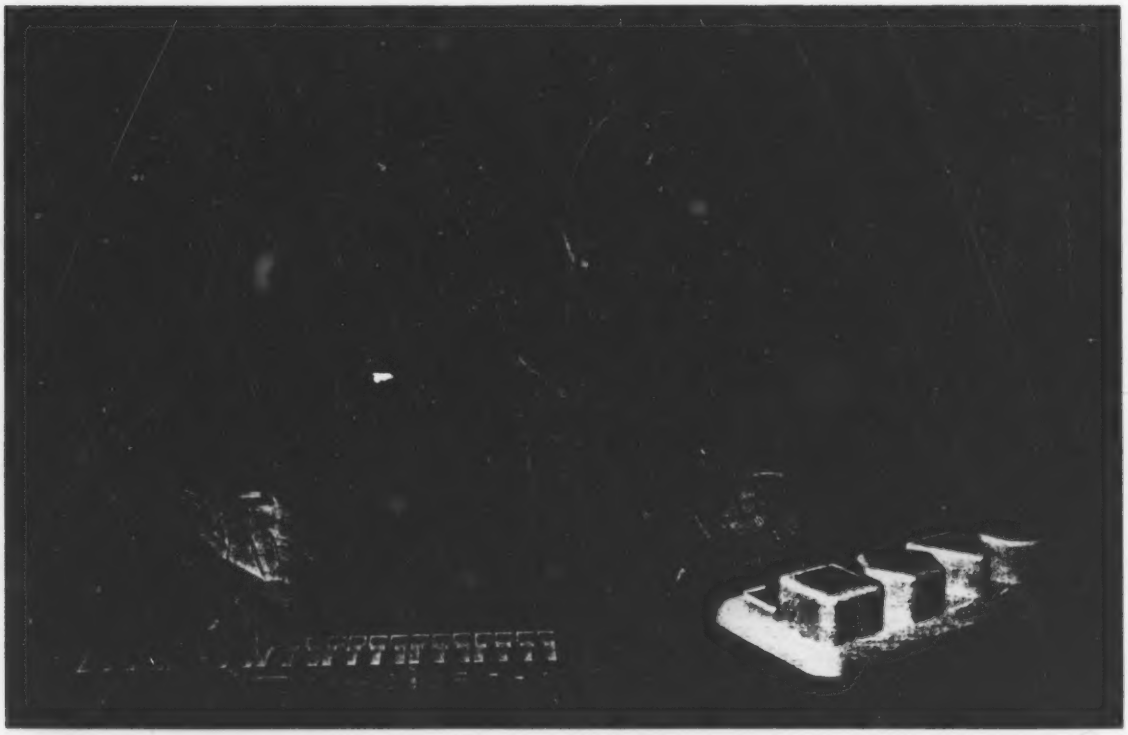
individually tailored microswitch (Wacker, Wiggens, Fowler, & Berg, 1988). This system may be transferred easily between home and school. Different types of microswitches can be used with computers, battery operated toys and other devices, as well as tape recorders. These devices provide children with severe physical and multiple disabilities with a means of expressive communication. Computer equipment may be available only at school because of problems with portability and cost. For example, the Touch Talker by Prentke Romich has a display monitor, voice output, and a pressure-sensitive keyboard on which an individual child's set of communication symbols can be placed. Pictures or tactile symbols can be arranged on pressure-sensitive keyboards such as the Dunamis Power Pad and the Unicorn Keyboard from Don Johnson Development Equipment.

Mar and Sall (1994) implemented microswitch and computer technology to promote the communication skills of children with multiple disabilities including vision and hearing impairments. Specific communication goals included helping the child recognize the relationship between behavioral responses and functional or social outcomes; participate in turn-taking and imitation activities with peers; and promoting the expressive use of two symbol combinations (Mar and Sall, 1994). An initial vocabulary should reflect those things that are important to the child, activities and objects that are used frequently, and words that can be used in many situations (Musselwhite & St. Louis, 1988). For example, "eat" is a more useful word than "cracker" or "apple."

Communication Boards

Communication boards are composed of a flat surface with a set of symbols or pictures. The child can convey a specific message by touching or pointing to the representative picture or symbol. Initially, the communication board may contain a single picture that represents a preferred activity or a single picture and a blank card.

Communication boards or notebooks may be developed for a single purpose or for multiple situations (Miller, 1993). For example, a "recess" communication book may contain pictures of outdoor play equipment in a multiple-pocket plastic photograph album sheet or in a plastic credit card holder in a wallet. For multiple situations, communication books may be organized by categories: for example, foods, toys, people, and activities. When organizing communication displays, consideration should be given to the preferences, needs, and ability of the child including functional hand use and visual scanning skills (Miranda, 1985). In addition, the type, size, number, and position of pictures will need to fit the child's visual, cognitive, and motor needs. For example, line drawings may be more easily recognized than photographs by children with visual impairments and multiple disabilities (Writer, 1987). Furthermore, combining and manipulating the color, size, contrast, shape, and graphic patterns of communication symbols can increase the visual attention of students with severe disabilities and visual impairment (Bailey & Downing, 1994). Displays should be organized in order to be accessible; for example by pictures that are recognized easily and placed within the child's visual field, and placed in plastic holders or pages that can be manipulated easily. In addition, the child should



A child may indicate the desire to participate in an activity by touching or picking up the object cue.

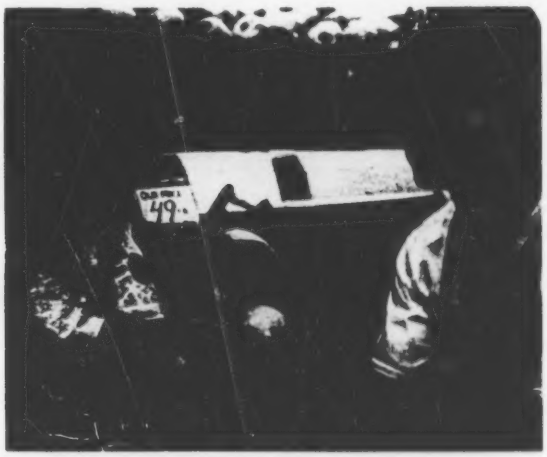
have a communication book at home and at school in order to participate actively in both environments.

Object Cues

Object cues may be used on communication boards for some blind children with multiple disabilities or for children who do not recognize pictures or drawings of objects. Object cues are tangible symbols that represent people, places, and activities (Bloom, 1990; McGinnes & Treffrey, 1982; Rowland & Stremel-Campbell, 1987; van Dijk, 1982). Examples include real objects (a cup to indicate lunch), miniatures (a toy cup to indicate lunch), pieces of the real object (chain to indicate swing), or an object associated with a similar person (headband to indicate the physical education teacher). Object cues should be selected from the child's point of view according to what makes sense to him. For example, a piece of chain will represent a swing to a child only if he sits and holds onto the swing by the chains. A miniature school bus may not make sense to a child who is totally blind, but a piece of the seat belt attached to a buckle may get the idea across. Object cues should be presented consistently in order to become meaningful to the child. For example, every day before the child goes outside to the swing, he should be given the piece of chain (object cue for swing) when told "Go outside to swing." At first the child will need to hold and carry the piece of chain to the swing in order to connect the cue with what it represents.

Initially, object cues may be introduced as a means of receptive communication to let the child know what is about to happen: for example, a cup to indicate snack time. At first, the child needs to use the object during the activity (drinking from the cup), in order to understand what the object cue means: cup = snack time. If a child is totally blind with severe physical disabilities, the adult will need to help the child feel and manipulate the object.

Object cues can be attached to communication boards with velcro, organized in containers, located in activity areas, carried by the child in



The child's perspective must be taken into account. Identifying features should make sense to the child.

a fanny pack, or carried by an adult in a fanny pack or apron. When the child understands the meaning associated with object cues he will use them to express his needs and desires. The child should know where to locate object cues for favorite activities. First, a child may indicate the desire to participate in an activity by touching or picking up the object cue: for example, taking the cup when asked "Want a snack?" Next, the child may indicate a choice between two activities by selecting one object cue: for example, by picking up the cup and discarding a piece of chain when asked "Do you want to swing or have a snack?" Finally, a child may initiate a request for an activity: for example, to go outside to swing by getting the piece of chain and showing it to an adult.

IDENTIFICATION OF PEOPLE, ANIMALS, AND OBJECTS.

Blind children with multiple disabilities who have very limited language skills cannot communicate about people, objects, and events without specific intervention. Sometimes their reactions may be based on sensory input about a person or object that is not obvious to others. For example, many young blind children associate smells with pleasant or unpleasant experiences. A child may seem to dislike the school nurse because her smell is associated with hospitals and doctor visits. Another child (whose mother smokes) may seem to like this same school nurse because she smokes. Children develop a sense of control over their environment when they are able to identify and communicate about people, activities, and objects.

One instructional strategy developed for children with dual sensory impairments involves selecting a distinctive feature about a person, object, or event that the child can act upon (Jurgens, 1977). For example, touching a teacher's bracelet will not be sufficient to develop a gesture, but twisting it enables a movement on the wrist to become the gesture which represents the teacher.

Similarly, animals can be identified through gestures. A cat might be distinguished by its sharp claws and scratching movements while a dog might be characterized by a wagging tail. As discussed previously with touch and object cues, the child's perspective must be taken into account. Identifying features and gestures should make sense to the child. The child's action on an object should be used to select the identifying feature. For example, all vehicles have four wheels but there is a high step to get into the school bus, and one must push the back of the front seat forward to get into the back seat of a two-door car. Playing on the swing or playing on the monkey bars require different hand placement and body movements. Fruits are eaten in different ways: for example, by peeling a banana or biting into a whole apple. These gestures come from the child's active involvement in activities and will help the child discover the relationship between the abstract signs for BANANA, or APPLE and what they represent. This strategy for developing gestures not only encourages the child's communication development but also the child's active participation in learning experiences.

USING SIGNS

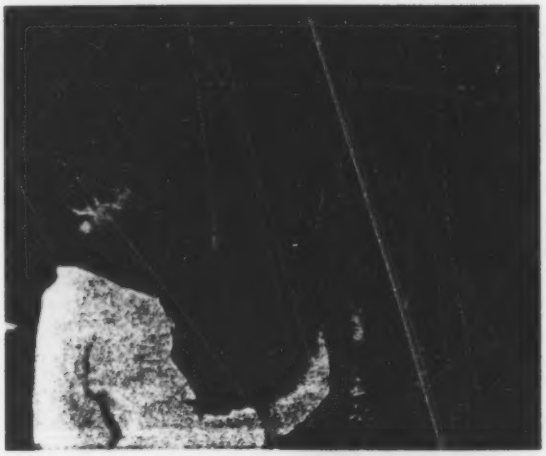
Many nonverbal children with severe disabilities benefit from the use of signed communication. The usefulness of signs is not limited to just those children with severe hearing loss. Some teachers and families are concerned that the introduction of signs may impede the child's development of speech. On the contrary,

research indicates that signs may encourage rather than discourage the child's development of speech if he has that potential (Reichle & Karlan, 1985; Remington & Clark, 1983).

There are several considerations when using signs with young children with visual impairments. If the child has low vision, the signs need to be made within the child's visual field and at a distance that is best for the child to see them. In addition, the signer should wear clothing which will allow hand movements, hand shapes, and hand positions to be seen easily. For example, a shirt in a solid color that provides a strong contrast with skin color is more appropriate than a shirt with a busy pattern. The speed of signing may need to be slowed down, the number of words in a sentence may need to be limited, and the hand movements may need to be made smaller to allow the child time to process the visual input.

Some young children with multiple disabilities benefit from the following instructional adaptations for learning signs: making the sign with the child's hands or physical guidance; placing the child's hands on the signer to feel the sign movements or tactile modeling; making the sign on the object, for example, by signing SHOE on the child's shoe he is looking at or feeling; and pairing the number of movements of the sign with the number of syllables in the word, such as saying and signing the word BANANA.

If the child is blind, signs will need to be introduced coactively (helping the child to make the sign), and through interactive signing (having the child feel the adult's sign) (Watkins, 1985). There is a tendency for staff to use physical assistance whenever signing with nonverbal children with severe and multiple disabilities, those who are deaf-blind, and those who are blind. Physical assistance to make signs should be limited to prompting a child to communicate rather than for the child to receive a message. Otherwise, he will not be able to distinguish between someone communicating with him and someone prompting him to communicate. In addition, care should be taken to make the movements



Many nonverbal children with severe disabilities benefit from the use of signed communication.

specific to the sign, i.e., "the signal," so that they are very distinct and clear to the child. He must discriminate the sign from other movements which accompany coactive signing (for example, taking and positioning his hands to make the sign is a "transition" movement) which may have an effect of a kinesthetic analogy to visual clutter or background noise.

Many teachers working with children whose multiple disabilities include visual impairments may not know any signs or where to start. Begin by making a list of words that are important for communicating with the child and for encouraging the child to communicate. Identify a vocabulary with family and other team members, decide on the signs to be used for these words, and use them consistently across activities. In order to encourage expressive communication, select a group of signs that meets these criteria (Chen, Friedman & Calvello, 1990):

Motivating To the Child

Preferred objects (RADIO), favorite activities (SWING), and familiar people (DADDY).

Used Frequently

For daily routines (EAT, BUS).

Easy to Make

Signs which touch the body, have symmetrical movements, or can be seen by the signer are easy to make (MORE, SHOE).

The time of day, location in the room, child's position, and objects used in an activity are all natural cues that tell the child what is about to happen.

Easy to Understand
Signs that look like or feel like what they represent (EAT, COMB).

Signs which meet all four of these criteria are more likely to be produced and used by the child.

TOUCH CUES

Touch cues are tactile signals made on the child's body to convey a specific message (Rowland & Stremel-Campbell, 1987). For example, stroking the top of the right foot with a sock means "I'm going to put your sock on your right foot." This alternate form of communication is particularly useful during everyday routines with nonverbal children who are visually impaired with multiple disabilities and who do not seem to understand speech or signs. Touch cues should be paired with specific words in order to support the child's attention to and understanding of the spoken word (Goold & Hummell, 1993). Touch cues should be presented in a consistent and systematic manner on a specific location on the child's body or limbs if they are to become meaningful to the child. For example, the child will not begin to anticipate "getting socks on" if he sometimes receives a tap on the bottom of the foot, other times his toes are wiggled, and another time his left foot is stroked, followed by a sock being put on his right foot. Furthermore, touch cues should be selected carefully with consideration for the child's preferences and response to a particular stimulation. For example, a child who has been hospitalized frequently may dislike being touched on the feet because of experiencing many pricks during medical interventions. In this case, it might be better to use an object cue such as touching the sock to the child's hand to indicate "I'm going to put your socks on." Attention should be given to the type as well as placement of touch. A touch cue that is a firm or deep pressure is more easily tolerated than a light stroke. For some children with severe neurological impairments, certain types of touch on specific body areas may trigger reflex movements. It is important to consult with the child's physical or occupational therapist in identifying the most appropriate type and placement of touch cues for these children.

ROUTINES AND SCHEDULES

Establishing an ordered sequence in daily activities provides many opportunities for communication. For example, every activity has a beginning, middle, and end. It is important to use consistent cues or signals to prepare the child for the beginning and end of an activity and to involve him in the preparation or gathering materials and clean-up as appropriate (Siegel-Causey & Guess, 1989; Writer, 1987). These ordered sequences not only enable the child to participate actively but provide predictability and promote his sense of control over events. In addition, daily routines encourage instruction during natural situations and the child's understanding of and response to significant natural cues. For example, the time of day, location in the room, child's position, and objects used in an activity are all natural cues that tell the child what is about to happen (Downing & Eichinger, 1990).

Everyday activities provide meaningful topics of conversation. Routines can be analyzed to identify steps in the routine; the natural cues that are involved in the activity; and communication input and the child's behaviors that are to be encouraged, as illustrated in figure 4. Verbal input about what the child is doing should match the child's actions and highlight

critical aspects of the activity. The complexity of comments should match the child's perspective and ability to understand. Providing too much or too complicated verbal input will result in the child tuning out or becoming frustrated. On the other hand, appropriate pacing, exaggerated intonation, and putting words to the child's actions will tend to engage the child's attention.

It is also important to talk about unpleasant feelings that a child may experience. The child's behavior can be interpreted within the context of the situation and knowledge of the child. Ignoring these emotions will not make them disappear or improve the child's behavior. Body movements and facial expressions, along with words, can be used to acknowledge and interpret a child's behavior when the child is experiencing a particular emotion. In this way the child can develop an understanding of emotions and words for his feelings.

A weekly schedule with planned activities on different days will help the child differentiate between days. For example, "swimming day" or "cooking day" will be understood before "Monday" and "Friday." The concept of time can be organized through a picture or object calendar. Teachers of children who have low vision and who are multiply disabled have reported that line drawings are more easily recognized than photographs (Writer, 1987). The relationship between line drawings and the real objects they represent may be recognized easily because (a) the child can participate in making the drawing and refer to the real object while drawing each feature; (b) the color and shape of the drawing can be made the same as the real object; (c) in some cases, the object may be used as a stencil and the drawing will be the same size. On the other hand, photographs may be more difficult to recognize because (a) they are different colors and shapes than the real objects in the child's experience;

Figure 4

ROUTINE ANALYSIS

Child Deborah **Date** September 21, 1994

Activity Snack

Steps in Routine	Natural Clues	Child Behaviors to Encourage	Input
For example: Preparing for the activity, marking the beginning, middle and end of activity, and transition to another.	For example: Characteristics of the environment, what adult/ peer does to engage the child's attention and participation.	For example: Ways the child can indicate anticipation and participate actively.	For example: Ways to provide appropriate communication input, may include: speech, sign, touch cues and object cues.
Example: Snack Time			
Getting ready for snack.	Food on table. Children wash hands at sink. Offered stack of napkins.	Follow directions. Wash hands. Walk to table. Place napkin at each place.	"Snack time." "Wash hands." "Give everyone a napkin."
Eating snack.	Offered plate of cut up bananas and apples.	Choose between banana and apple.	"Want some apple or banana?"
Drinking.	Offered milk carton and juice carton and a straw.	Choose between milk and juice. Use the straw.	"Want milk or juice?"
Clean up.	Other children wipe mouths. Garbage can close by in usual place, other children throw away napkins and containers.	Wipe mouth with napkin. Throw empty container and napkin in garbage can.	"Wipe your mouth." "Clean up." "Great job."
Go to bathroom.	Other children go to bathroom.	Follow peers walk to bathroom.	"Bathroom time."

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Activity books help prepare children for upcoming events.

(b) they display the object from an unfamiliar perspective for the child; (c) they have too much detail or visual clutter; (d) they may be glossy and attract glare.

It is important to prepare the nonverbal child by talking about what is going to happen next and by providing object cues that represent the upcoming activity. Events can be characterized by using objects which are particular to those activities. For example, the child will begin to understand that taking a certain bag indicates "going shopping" and that a backpack means "going swimming."

Souvenirs from activities that the child has experienced may be organized into "experience" or "activity" boxes. For example, help the child save candles and a paper hat from a birthday or a tongue depressor and a cotton ball from a doctor's appointment. Similarly, "experience" or "activity" books can be developed as tangible and simple stories of past experiences. These experience boxes or books can be used to prepare the child for an upcoming event that he has experienced before.

"Social stories" can also be developed from the child's point of view and to fit the child's level of understanding in order to prepare the child for an upcoming event (Gray & Garand, 1993). For example, a story might focus on what will happen at another child's birthday party at school: "I will sit at the table. I will sing 'Happy Birthday.' Mary will blow out the candles. I will eat cake. Mary will open presents. We will play outside."

Although regular routines are helpful for all children, they are even more crucial for children whose multiple disabilities include visual impairment because they offer predictability, structure, a sense of control, and opportunities for communication and developing mastery. In addition, routines require repetition which helps the child to remember, to practice, to improve, and to generalize learning.

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Chapter 6

Jamie Dote-Kwan

TEACHING DAILY LIVING SKILLS

Self-help skills are some of the most critical skills to teach a child because they provide a sense of control, mastery, and independence. Since these areas are so important for children with multiple disabilities as well as their families, this chapter will:

a) Describe the functional curriculum approach to developing daily living skills for very young children with severe multiple disabilities and visual impairments;

b) Identify critical daily living skills;

c) Articulate strategies for developing daily living skills through everyday routines.

Frequently, young children whose multiple disabilities include visual impairment demonstrate delays in the self-help skills of feeding/eating, dressing, grooming, and toileting. Professionals have suggested several possible reasons for these delays (Silberman, 1986; Van Etten, Schell, & Van Etten, 1980). First, the lack of adequate functional vision may cause the child to seem uninterested in self-help skills. For example, it is the sighted infant grabbing at the spoon or imitating the behavior of scooping that informs the parents he is interested in using a spoon. Infants with severe visual impairment may not display this behavior. Next, the combination of visual impairment and physical disabilities may influence the ease and manner in which skills can be acquired. In addition, the parents or primary caregivers may not require their young children to independently perform these skills because of their severe disabilities. However, educators need to be careful before labeling a parent as overprotective. Childrearing practices and expectations for self-help skills vary from one culture to another. For example, in the Thai culture, sighted children are not required to feed themselves until they can eat without making a mess at about four or five years of age. Therefore, Thai parents may not require their blind preschooler to feed himself because it is their practice with any child regardless of the presence or absence of a disability. Finally, a possible reason for delays in self-help skills may be that many children with multiple disabilities lack the cognitive and fine motor skills required for dressing, eating, grooming, and hygiene.

It is important to remember that although the primary self-help activities are bathing, dressing, eating, and toileting, numerous other concepts can be incorporated into these activities. For example, bath time provides an excellent opportunity for learning about body parts and concepts such as "wet" and "dry," "in" and "out." Dressing provides opportunities to learn about body awareness, matching, directional terms (i.e., "Your socks are on the bed," "Your socks are *in* the bottom drawer"). Finally, eating can encourage visual scanning when the child is looking for the Cheerios on a plate or tray.

FEEDING

Meal time may be a series of unexpected and unpleasant surprises to the blind child who cannot anticipate the cup or spoon before they touch her mouth. When feeding this child it is important to tell her what you are doing, to describe to her the size and texture of the food, and to wait until she is ready to take a bite. If the child has some functional vision, place the plate at eye level by either holding or propping it up. If the child is unable to view objects in the lower half of her visual field, hold the dish or bowl several inches above the table so the food is in her line of vision. This positioning encourages her to use her functional vision and helps her anticipate what is about to happen.

Another technique is to hesitate momentarily before actually placing the cup or spoon on her lips, so she can have the opportunity to smell or feel the temperature of the food. Both of these techniques help the child to anticipate the food and determine how the food should be eaten: either chewed, swallowed, sipped, or sucked. The ability to anticipate the food and select the appropriate method of eating (e.g., chew or swallow) facilitates the child's acquisition of other feeding skills. Figure 1 provides a list of other skills appropriate for this population.

Figure 1

MAJOR FEEDING SKILLS

S. Silberman, 1986

Sucking

Swallowing

Chewing

Finger feeding

Eating with a spoon

Drinking with a cup

Using a straw

Eating with a fork

Cutting with a knife

Pouring liquids from a container

Table manners

Preparing simple foods

When the child is ready to use a spoon, begin with the least amount of assistance necessary, such as verbal directions, gestures, or modeling (see Chapter 4 for a complete description of the prompting hierarchy). However, some children, especially those who are totally blind, may initially need more assistance. This level of assistance requires a graduated guidance procedure (Silberman, 1986). Begin with the adult's hand totally around the child's hand and the utensil during eating. When the child can grasp the spoon by herself, then the adult can lightly guide her hand and gradually fade the level of assistance by moving to the wrist, forearm, elbow, and finally upper arm and the intensity from hand-over-hand to a light touch or motor prompt.

The ability to anticipate the food and select the appropriate method of eating (e.g., chew or swallow) facilitates the child's acquisition of other feeding skills.

Specific Strategies

1) Use a consistent pattern for setting the table and presenting foods (i.e., milk on the right of the plate, meat at bottom of the plate, vegetables on the right of the plate).

2) Provide ample lighting so the place setting and food can be seen.

3) Provide high contrast for the low vision child by using a light colored plate for dark food items and a dark colored plate for light food items.

4) Use the appropriate size utensils and dishes. The bowl of the spoon should fit easily in the child's mouth.

5) Secure the plate or bowl to the table so it does not move when the child is attempting to scoop or pierce food items. Placing a damp dish cloth or paper towel under the bowl or plate can achieve this simply and inexpensively.

6) Show the child (visually or tactually) where each food item is located on his plate.

7) Use a small child-size pitcher so the child can participate in pouring juice.

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Use the appropriate size utensils and dishes. The bowl of the spoon should fit easily in the child's mouth.

3) Show the child how to hold her cup with one finger inside it in order to know when to stop pouring the liquid.

DRESSING SKILLS

Frequently, young children need to be dressed and undressed at those times when families are apt to be rushed. For example, in the morning, families may get the child ready for school by dressing him because of the lack of time. The parent thinks: "I can do it more quickly." Therefore, asking families to teach dressing skills may not be a realistic expectation. Instead, the educator should identify times during the school day that would be appropriate for teaching dressing or grooming skills. These skills should be taught as part of the daily routine; for example, arriving and leaving school, before or after outdoor play, or before or after nap time.

Dressing involves many skills. There are numerous fine motor and cognitive skills required (i.e., developing a pincer grasp, finger dexterity, sequencing, orientation—front/back, and knowledge of body parts). Undressing is usually an easier skill than dressing so objectives should be selected accordingly. Major dressing skills are listed in figure 2.

Since the completion of an activity is intrinsically motivating, backward chaining—doing the last step of the process first—is an effective technique. This provides the child with the sense of accomplishment. Once the child can put on an article of clothing independently, teach him how to deal with minor problems such as the sleeve being turned inside-out or when the entire garment is inside-out.

Specific Strategies

1) Use clothing that is loose fitting or one size larger at first. This allows the child extra room to locate neck and arm holes without binding and to snap and zipper pants without struggling to keep the two sides together.

2) Teach using the child's own body. Dressing dolls and using lacing boards require different skills and do not necessarily transfer to self-dressing, since the motor pattern is reversed (Silberman, 1986). Even if the child holds the dressing frame against her body, it is difficult to coordinate and balance the frame.

3) Begin by using large buttons and zippers and gradually move to smaller buttons and zippers.

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Dressing or grooming skills should be taught as part of the daily routine.

5) Develop a system of storing clothing and marking clothes to encourage independence. For example, place pictures or tactile symbols on each dresser drawer that identifies its contents (Gellhaus & Olson, 1993).

Adaptations

1) Use sneakers with Velcro or loafers rather than shoes with laces.

2) Wear pants with elastic waistbands rather than snaps, zippers, or buttons.

3) Use t-shirts or pullovers rather than button-down shirts.

4) Substitute Velcro fasteners for buttons, zippers, and snaps.

TOILETING SKILLS

Sighted children are not usually trained until approximately three years of age. When a child is ready for toilet training she may indicate this in some way such as pulling at her diapers or going into the bathroom. Many children with multiple disabilities will need to be taught through consistent and systematic instruction to use the toilet independently. Figure 3 provides a sequence of toileting skills appropriate for young children. A first step in making the child aware of the toileting process is to encourage a family member, father, mother, or older siblings to take the child into the restroom with them. This helps the child understand and recognize the use for the bathroom. In addition, be sure the child who is severely impaired or blind has had the opportunity to tactually explore the inside and outside of a clean toilet under specific supervision. This unusual experience will help assure the child that the toilet is not the "Black Hole" where things disappear.

Toileting should always occur in the bathroom so the child learns to associate the room with the activity. Toileting should also follow a consistent routine: recognizing the need and signaling this by words, gestures, or behavior. This signal may be going to the bathroom, placing hands between the legs, or pulling down pants. Establish a consistent routine for going to the bathroom. This would include the following steps: going to the bathroom, pulling down outer pants, pulling down underpants, urinating, wiping oneself, pulling up pants, flushing the toilet, washing and drying hands, and leaving the bathroom. This clear, consistent routine should be paired with simple but consistent language that describes the steps in the routine: For example, "Sara go potty," "Go to the bathroom," "Pull your pants down," and so on.

It is important to never leave the child unattended. The child must be physically secure on the toilet. Consultation with a physical therapist is recommended for correct positioning techniques for a child with physical disabilities and visual impairments. If a child is desperately trying to maintain her balance on the toilet she will not be able to concentrate on the task at hand. The child should be supported on both sides and her feet should be flat on the floor. Providing the child with clothes that are easy to remove will encourage independence in dressing skills. Simple "pull up" and "pull down" clothing such as pants with elastic waistbands is usually recommended.

Specific Strategies

1) Keep a schedule of when the child urinated and defecated.

2) Determine if there is a consistent pattern (after breakfast, before rest periods, etc.). For a child who urinates infrequently, more liquids may need to be offered to establish a pattern.

3) Schedule regular intervals for the child to sit on the toilet.

4) Do not allow the child to sit on the toilet for more than 15 minutes.

5) Reinforce the child for keeping dry and for using the toilet.

6) If the child wets, take her to the bathroom for changing clothes.

7) Have the child participate in cleaning up and changing.

8) The teacher/care provider should not show anger or any negative attitude toward the child.

For additional information see Moor's "Suggestions for Toileting a Blind Child" from the American Foundation for the Blind.

GROOMING AND HYGIENE

There are several age-appropriate grooming skills that children whose multiple disabilities include visual impairment should learn. (See

Figure 3

MAJOR TOILETING SKILLS

Awareness of being wet or soiled
Locating the toilet
Pulling down pants
Sitting on the toilet
Urinating in the toilet
Defecating in the toilet
Using toilet tissue
Flushing the toilet
Pulling up pants
Washing and drying hands
.....
Communicating when wet or soiled
Communicating the need to use the toilet

figure 4). Privacy should be encouraged during bath time for a child with visual impairment and multiple disabilities. Bathroom doors should be closed and curtains drawn across windows. Since a child with additional disabilities may not have the tactual awareness to feel or the motor ability to react quickly to extreme water temperatures, additional precautions should be taken to discriminate between hot and cold faucets. A spout cover will eliminate the danger of burns, and covers are available in a variety of colorful animal characters. Use texture identification on the hot and cold faucet such as a smooth piece of cloth for cold and a rough piece of cloth for hot. When filling either the tub or sink always start with cold water and slowly add warm water. Use a mat or a type of non-skid surface in the bathtub and along the outside of the tub for safety. Provide a bench or a small plastic chair for the child to sit on in a shower stall.

Figure 4

MAJOR GROOMING SKILLS

Silberman, 1986

Washing and drying hands
Washing and drying face
Tooth brushing
Combing and/or brushing hair
Blowing nose
Bathing or showering

Grooming supplies such as shampoo, toothbrushes, combs, and other plastic bottles should be selected in a contrasting color or marked with reflective tape to maximize the performance of the child within the natural environment (Gellhaus & Olson, 1993). Items used on a daily basis should be separate from those items used less frequently (i.e., toothbrush versus shampoo). Items should be organized and placed in plastic organizers, baskets, or shallow boxes to create contrast (Gellhaus & Olson, 1993). For example, placing the toothbrush, toothpaste, and dental floss in a separate container in the drawer facilitates the child's ability to use her vision to perform the grooming activity.

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Adaptations

1) Use a washing mitt instead of a washcloth for a child who has difficulty manipulating a washcloth.

2) Use a soap-on-the-rope or soap in a nylon to prevent it from dropping onto the floor.

3) Use liquid soap which does not require the rubbing of the soap on a towel.

4) Use scented bubble bath which is fun and an easy way to bathe.

5) Use a pump toothpaste dispenser which limits the quantity and does not require tremendous hand-strength to dispense.

6) Use flip-top toothpaste dispensers to eliminate the problem of locating the cap.

7) Use of an electric toothbrush for a child with limited range of motion or with tactile sensitivity.

8) Build up the handle of the toothbrush with a towel or foam rubber secured with tape to assist a child with poor grip.

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Chapter 7

ROLES AND RESPONSIBILITIES OF SELECTED DISCIPLINES

INTRODUCTION

Children with multiple disabilities have exceptional instructional needs. As discussed in Chapter 1, a visual impairment in combination with another disability reduces the child's access to information and influences how the child learns. Understanding a child's diagnoses and their educational implications is a very complicated yet critical aspect of planning instruction. In many cases, an educational team involving parents, the classroom teacher, and other specialists is needed to develop and implement a coordinated, comprehensive, and individualized instructional program. Members of the instructional team will vary according to the child's needs and the service delivery model.

As a classroom teacher you will be working with many specialists. This chapter identifies only three of those disciplines: the behavior support team, the orientation and mobility specialist, and the occupational therapist. The purpose of this chapter is to describe the roles of these disciplines and their specialized interventions. The chapter is composed of three separate sections, each discussing specific instructional practices from different areas of specialization, but all related to integrating objectives within the child's daily routines.

The first section, *Comprehensive Positive Behavior Support for Young Children with Significant Behavior Problems* provides detailed and practical strategies for interpreting a child's challenging behaviors and for developing a meaningful intervention plan. The second section, *Orientation and Mobility for Young Children with Multiple Disabilities* discusses the role of the orientation and mobility specialist, orientation and mobility techniques, and considerations for teaching orientation and mobility to young children with multiple disabilities. The third section, *Occupational Therapy for Young Children with Multiple Disabilities* discusses the role of the occupational therapist and provides an overview of therapy approaches with examples of specific strategies.

COMPREHENSIVE POSITIVE BEHAVIOR SUPPORT FOR YOUNG CHILDREN WITH SIGNIFICANT BEHAVIOR PROBLEMS

by Richard A. Mesaros

When children with disabilities display behavior problems, they are viewed as providing important and ongoing commentary regarding their needs, their programs, and their lives. They are "speaking" to their care providers about themselves in relation to their world. Therefore, challenging behaviors (self-injurious, aggressive, self-stimulatory, disruptive, and noncompliant behaviors that interrupt the learning process and can damage the physical environment) displayed by children with disabilities are not viewed by many special educators as random and isolated, but meaningful, purposeful, adaptive, goal-directed, and communicative. From this perspective, significant behavior problems are viewed as an individual's most efficient way to have important goals met; to predictably impact one's world; and to have some measure of power and control in one's life (Anderson, Albin, Mesaros, Dunlap & Morelli-Robbins, 1993; Carr & Durand, 1985a; Carr & Durand, 1985b; Carr, Levin, McConnachie, Carlson, Smith, &

When children with disabilities display behavior problems, they are "speaking" to their care providers about themselves in relation to their world.

Kemp, 1994; Donnellan, Mirenda, Mesaros, & Fassbender, 1984; Durand, 1986; Reichle & Wacker, 1993).

Such behavioral "language" is being paid attention to in a dramatically different way than it has historically. Today, rather than an almost exclusive reliance on reactive and punitive strategies to "solve" behavior problems after they have occurred, practitioners have realized the critical importance of a pro-active approach to addressing these problems (e.g., Anderson et al., 1993; Donnellan et al., 1984; Carr, Robinson, & Palumbo, 1990). Such practices begin with a comprehensive assessment of the many variables that influence the child and the behavior(s) of concern and move from such an assessment to the design and implementation of a multi-element behavior support program—rather than a narrow focus on single-procedure behavioral interventions (Carr, 1994; Evans & Meyer, 1985; Lavigna & Donnellan, 1986; Meyer & Evans, 1989; Reichle & Wacker, 1993). Such multi-element behavior support programs include:

1. Assisting the child to acquire new and more efficient "tools" (behaviors and skills) to replace the old "tools" (behavior problems) to achieve his or her important goals, for example, new gestures or words to indicate a need for assistance rather than grabbing, hitting, or throwing materials (Dunlap, Johnson, & Robbins, 1990);
2. Sensitively making ecological and environmental adjustments and accommodations to "smooth the fit" between the child and the expectations and requirements of the setting and/or program, such as instructional adaptations to more closely fit the child's learning characteristics (e.g., prompts that provide enough information for the child to initially learn without errors) and materials modification to increase motivation (e.g., using materials which make interesting sounds when the child is successful);
3. Enhancing the "life-style" of the child by offering increased variety and accommodation of personal preferences in daily activities, increases in community integration and inclusion, expanded social networks, improved social relationships and more typical play, education, and life experiences, for example, integrated environments where non-disabled children learn and play with many different activity possibilities in which the child's choices are respected and supported;
4. Using positive behavioral procedures to support the display of new and appropriate behavior and to help decrease problem behavior, for example, actively giving value to and highlighting the child's appropriate behavior;
5. Maintaining the value, respect, and dignity of the child by using nonviolent, nonaversive, and positive behavioral support strategies when problem behaviors are displayed, for example, gently redirecting a child who is displaying the beginnings of a tantrum to a different activity and facilitating his or her relaxation (Anderson et al., 1994; McGee, Menolascino, Hobbs, & Menousek, 1987).

The purpose of this chapter is to illustrate the current theory and practice of positive behavior support to educate, assist, and support children with disabilities who display significant problem behavior. In order to compare and contrast current "best practice" in positive behavior support to those behavioral services offered historically, two vignettes are presented: "Then" and "Now."

THEN...

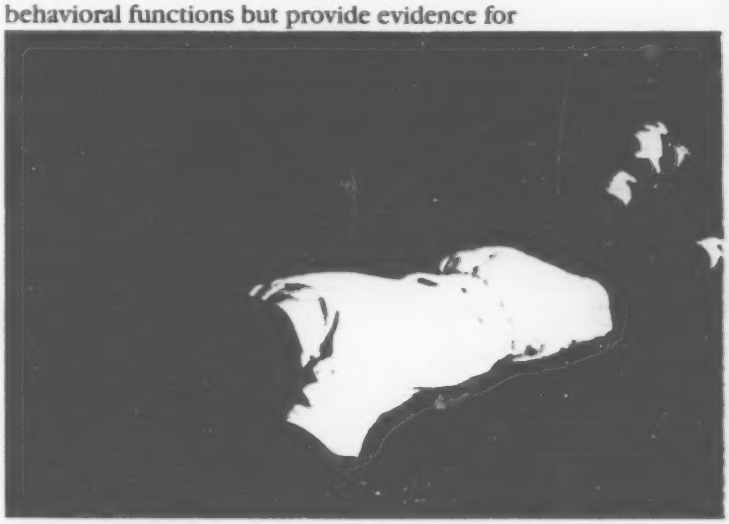
Kenny is a four-year-old boy with significant developmental delay and visual impairment. He is being educated in a preschool with other children who share his disabilities. The classroom is located at a "special education" school serving a variety of other children with significant disabilities. Kenny displays a variety of behavior problems such as loud, long noises; striking children near him; and laying on his back when directed to do certain activities. In an attempt to decrease the noises, the staff tried saying "Kenny, no noises!" put one finger over his lips when he began to make noise; and separated him to an area by himself. The frequency of Kenny's noises remained the same. For the behavior of hitting, staff held Kenny's hands to his side or down on the table for 10 seconds each time he hit another child; escorted him to a two-minute "time-out" with a firm "No hitting, Kenny!" and took away snack time and preferred toys when Kenny hit. Kenny's hitting remained the same. When Kenny laid on his back after certain requests, staff physically moved Kenny to where they wanted him to be and then "motored" him through the activity, which he typically resisted; left him on the ground "for as long as it takes;" and removed Kenny to "time-out." There was a subsequent increase in this behavior noted by staff. The staff is very frustrated with Kenny and has lately been suggesting he needs more "one-to-one" and a more restrictive setting.

NOW...

Using the process outlined in figure 1, Kenny's family and school staff came together as a Behavior Support Team (BST) and designed, implemented, and evaluated a comprehensive positive behavior support program to assist Kenny with the behaviors of making noises, hitting his peers, and laying on the ground. Understanding the importance of description and clear definitions in this process, the BST first described Kenny (the various contexts where he spent his time; their hopes and ideas regarding his future) to arrive at shared perceptions of who Kenny was and a vision of where he could go as a person. After these more holistic descriptions of Kenny, the BST clearly defined the specific behaviors of concern so that there was agreement as to what constituted Kenny's behavior problems and how to reliably and accurately measure progress.

BEHAVIORAL ASSESSMENT

The current conception of behavior problems noted above assumes that there are legitimate purposes for and functions served by behavior problems. In an effort to understand those important functions of Kenny's behavior and to then design a data-based behavior support program, the BST undertook a comprehensive behavioral assessment of Kenny at school (Anderson et al., 1993; Donnellan et al., 1984; O'Neill, Horner, Albin, Storey, & Sprague, 1990; Pyles & Bailey, 1990). Such assessments allow not only for a more thorough understanding of behavioral functions but provide evidence for

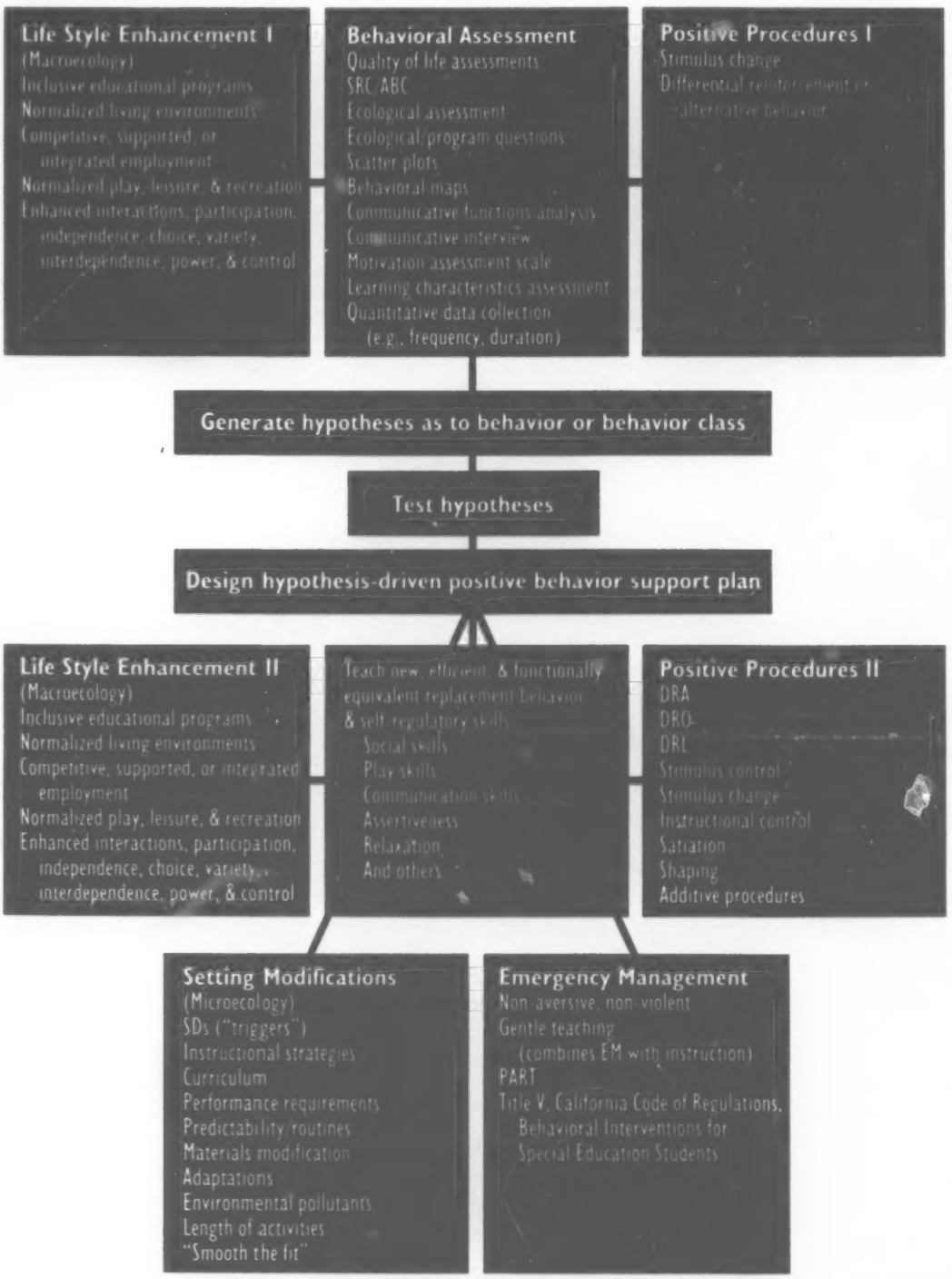


Multi-element behavior support programs assist the child in acquiring new and more efficient "tools" (behaviors and skills) to replace the old "tools" (behavior problems) to achieve his important goals.

Figure 1

A MODEL FOR CONDUCTING A BEHAVIORAL ASSESSMENT AND IMPLEMENTING A POSITIVE BEHAVIOR SUPPORT PROGRAM

Adapted from Anderson, Mesaros, & Neary (1992) and Anderson, Albin, Mesaros, Dunlap, & Morelli-Robbins (1993)



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patterns of behavior across various conditions—patterns which can be instructive as to the motivation for the behavior problems as well as the contexts which may be contributing to them. Such assessments included an examination of:

1. Kenny's "quality of life" indicators, such as his relative choices in activities, materials, activity length, reinforcers, order of activities, etc; access to a variety of activities; and relative independence, participation, interactions, contributions, power, and control—for example, the extent to which Kenny is successful without assistance, his active engagement with materials, his social skills, the products of his activities, and the deference paid to his needs and preferences (Anderson et al., 1993; Meyer, Eichinger, & Park-Lee, 1987);

2. The various contexts or "ecologies" which Kenny regularly interacted with and the relationship between presenting environmental conditions and those which may be more temporally distant, for example, the classroom, playground, specific areas of each, and settings in which he had prior successes or problems, like home or the bus ride to school (Anderson et al., 1993; Donnellan et al., 1984; Dunlap & Kern, 1993; Touchette, MacDonald & Langer, 1985);

3. The motivation(s) of Kenny's problem behavior(s), be they displayed for the purposes of acquiring sensory input (e.g., self-stimulatory behavior), meeting attention/affiliation needs (e.g., grabbing another child to keep him or her near), escaping or avoiding certain situations (e.g., wandering off only when certain demands are made of him and not at other times), having access to desired objects or events and/or other important human motivations (e.g., banging on the locked cupboard where his lunch is prior to the prescribed lunch period);

4. Kenny's learning characteristics, including relative modality preferences and environmental arrangements indicating the ways in which Kenny "likes" to learn, for example, sitting cross-legged on the rug next to other children while working on activities which provide rich auditory feedback and require various motor skills, like Sight and Sound Books;

5. Kenny's communicative repertoire, for example, his communication skills, both typical and atypical, in natural, real-life situations across home, school, and other important environments (Donnellan et al, 1984; Reichle & Wacker, 1993); and

6. The frequencies and duration of the problem behavior(s).

The Behavior Support Team (BST) must be aware that there are various strategies that can be put in place concurrent with their assessment efforts so that they can immediately begin to provide support.

To this end, the BST directly and systematically observed Kenny in a variety of contexts and conditions; completed questionnaires, checklists, charts, and behavioral inventories; and interviewed significant individuals not members of the BST who had information about Kenny in various settings.

LIFE-STYLE ENHANCEMENTS AND POSITIVE PROCEDURES

The BST was aware that there were various strategies that they could put in place concurrent with their assessment efforts so

that, even prior to the data-based decisions they would make after the initial assessment phase was completed, they could immediately begin to provide supports for Kenny. After meeting to discuss such strategies, the BST implemented supports which included enhancing Kenny's daily routines with more choices; taking Kenny's lead with activities; introducing new activities to enhance variety; increasing opportunities and interactions with typical children from a nearby elementary school; modifying the schedule to increase high-preference activities; limiting demands to engage in certain activities which were associated with Kenny's problem behavior; and to increase the density or richness of available reinforcement for Kenny throughout the day (Anderson et al., 1993). These efforts were not intended to eliminate the problems or provide for thorough support. Rather, they were put in place to immediately support Kenny while the BST collected information to guide their more comprehensive planning and multi-element support program.

HYPOTHESIS DEVELOPMENT AND TESTING

After collecting considerable assessment information over a period of time, the BST met to reflect on the information, extract patterns of behavior across activities and contexts, and to generate some initial hypotheses as to the purposes and goals attained by Kenny's behavior problems, such as the motivation(s) for Kenny (Anderson et al., 1993; Dunlap & Kern, 1993). As noted above, these can often cluster around sensory motivations, attention/affiliation motivations, escape or avoidance motivations, access motivations, and related important human motivations. The patterns in the data suggested that Kenny engaged in the behavior of loud, long noises particularly:

1. During unengaged time and less so during active and typical routines;
2. When it was difficult for Kenny to predict what was to come next in his day but less so when Mary, one of the assistants in class, worked with him; and
3. When the noise level was higher than usual.

The data suggested that Kenny would strike other children particularly:

1. When he was not actively provided with reinforcement but others were;
2. In large groups but not as frequently in two-to-three person grouping arrangements;
3. When other children would crawl on him or otherwise invade his space; and
4. When peers were unresponsive to Kenny's touches.

Lastly the data suggested that Kenny would lay down after a direction, particularly:

1. If the directions were presented as a demand rather than as a request;
2. When there were no concrete referents available but less so when the request was accompanied by a representative object;
3. When there were no options offered, but less so in multiple-option choice situations;
4. After an activity was completed and another preferred activity requested if the activity had lasted more than 15 minutes; and
5. When the instructions were too complex and assistance was less available rather than when the expectations were clearly stated and assisted.

Once these patterns in the data were recognized, the BST generated "working" hypotheses as to the motivations for Kenny's problem behaviors. Each of these hypotheses was then tested: the BST implemented some tentative interventions suggested by the data and their hypotheses and noted the results (Anderson et al., 1993; Dunlap & Kern, 1993). For example, the data suggested that "escape" and "attention" were operating for Kenny when he made noises. After some further discussions with Mary, in whose presence Kenny seldom made noises, staff provided more and simplified verbal information sooner for Kenny and prior

to a transition—adopting in fact, a style which Mary typically used with Kenny—rather than simply saying, "Let's go, Kenny." This increased and clarified information assisted Kenny in being able to predict what was to come next in his day.

In discussions, staff became aware that Kenny made noises before a transition when he was not offered clear information as to what was coming next. Their typical reaction was to provide additional information after they "read" Kenny's noises as confusion and/or refusal. Consequently, Kenny learned to make noise and use this important behavioral tool to get his attention needs met (more information from adults) and to escape the unpredictability of the transition time. Certainly, the staff's strategies of "Kenny, no noises!," putting one finger over his lips when he began to make noise, or separating him to another area of the room were destined to fail as these strategies did not address the motivational issues important for Kenny.

After this hypothesis testing period for the behavior of making noise, staff noted fewer noises when these tentative intervention strategies were used. Their working hypotheses as to the motivation of Kenny's noises, such as "escape" and "attention" (a request for clarification and more information), were supported in this process. Clearly, there was also a suggestion during this and their subsequent hypothesis testing phases as to what support components might be useful for Kenny in building a multi-element behavior support program.

DESIGNING, IMPLEMENTING AND EVALUATING A POSITIVE BEHAVIOR SUPPORT PROGRAM

After the hypotheses were generated, tested, supported, modified, refined, and retested, the BST developed a comprehensive support program for Kenny based explicitly on the data collected and the motivational characteristics noted (Anderson et al., 1993). Using the model outlined in figure 2, Kenny's multi-element program involved:

Positive behavioral procedures support appropriate behavior, decrease problem behavior, and encourage successful participation in daily activities.

1. Assisting him to acquire new and more efficient "tools" (behaviors and skills) to achieve his important human goals and to replace his old "tools" (behavior problems). For example, rather than rely on making noises to mask excessive classroom noise, Kenny learned to request headphones with soft music when the noise level became overwhelming by presenting a staff member with a toy harmonica, representing "music," available on Kenny's "daily routine and choices" shelf; Kenny learned to access his "daily routine and choices" shelf when he had periods of unengaged time to request activities; and Kenny was assisted to move away from other children intruding on his space without resorting to hitting them.

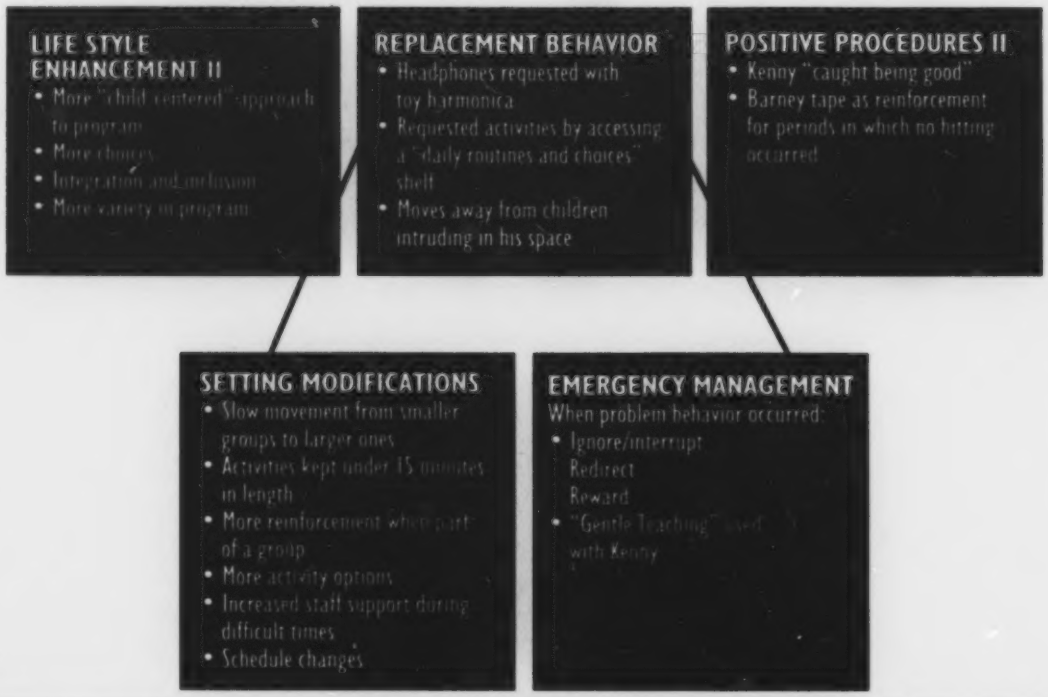
2. Sensitively making ecological and environmental adjustments and accommodations to "smooth the fit" between Kenny and the expectations and requirements of the setting and/or program. For example, a process of moving Kenny more deliberately from smaller groups to larger group activities was implemented; activity length was kept under 15 minutes; more frequent reinforcement for Kenny when he was part of a group was made available; more activity options were made available; increased staff support was put in place for Kenny during particularly difficult activities; and schedule changes were made to allow for successful activities to be interspersed with less successful ones for Kenny (Anderson, et al., 1993).

3. Enhancing Kenny's "life-style" by offering increased variety and accommodation of his personal preferences in daily activities, increases in community integration and inclusion, expanded social networks and improved social relationships and more typical play, education, and life experiences. For example, Kenny's "daily routine and choices" shelf allowed for a more "child-centered" approach wherein staff supported and elaborated on Kenny's activity preferences; a program of integrating with same-age non-disabled peers at a nearby school was established, with plans for movement full-time to an inclusive preschool program with special education supports; integration efforts allowed Kenny's social and communicative competencies to be addressed as he could use his "touch" behavior with responsive children rather than being ignored and striking out at unresponsive peers (Odom, McConnel & McAvoy, 1993).

4. Use of positive behavioral procedures to support the display of Kenny's new and appropriate behavior and to help decrease

Figure 2

A MULTI-ELEMENT POSITIVE BEHAVIOR SUPPORT PROGRAM FOR KENNY


LIFE STYLE ENHANCEMENT II
• More "child centered" approach to program
• More choices
• Integration and inclusion
• More variety in program
REPLACEMENT BEHAVIOR
• Headphones requested with toy harmonica
• Requested activities by accessing a "daily routines and choices" shelf
• Moves away from children intruding in his space
POSITIVE PROCEDURES II
• Kenny "caught being good"
• Barney tape as reinforcement for periods in which no hitting occurred
SETTING MODIFICATIONS
• Slow movement from smaller groups to larger ones
• Activities kept under 15 minutes in length
• More reinforcement when part of a group
• More activity options
• Increased staff support during difficult times
• Schedule changes
EMERGENCY MANAGEMENT
When problem behavior occurred:
• Ignore/interrupt
Redirect
Reward
• "Gentle Teaching" used with Kenny

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Kenny's problem behavior, for example, staff increased their own awareness and skill at "catching Kenny being good;" a "DRO" (differential reinforcement of other behavior) program was instituted wherein Kenny received special reinforcement (a particular Barney tape of popular children's songs) for periods of time during which he did not hit peers; and staff made sure that they provided Kenny positive social feedback when he appropriately followed directions (Lavigna & Donnellan, 1986).

5. When problem behavior (particularly more volatile hitting) was displayed, and to maintain Kenny's value, respect, and dignity—nonviolent, non-aversive, and positive behavioral program strategies were used; for example, "Gentle Teaching" (McGee, Menolascino, Hobbs & Menousek, 1987) which involved a sequence of teacher behavior of Ignore/Interrupt-Redirect-Reward and modified progressive relaxation (Cautela & Groden, 1977).

With the strategies noted as well as other positive components, ongoing and follow-up data revealed substantial increases in Kenny's appropriate communicative and social behavior with peers and adults, cooperation with reasonable adult requests and directions, and more active, sustained and successful engaged time during preschool. Concomitant and substantial decreases were noted for noises, for laying down when directions were given, and for hitting others. Anecdotally, the BST noted Kenny displayed a much more "up beat" affect in school after the behavior supports were put in place. The BST expected to continuously monitor and modify Kenny's support program as he continued to grow and succeed, and as there were new challenges for staff.

As is clear from the two vignettes, a proactive, comprehensive, multi-element positive behavior support program is an educational effort—not an intervention of "behavior decrease." Such practices are becoming widespread in special education and habilitation and have recently been mandated in the state of California (Special Education Title 5, California Code of Regulations, 1993). Children with disabilities and significant behavior problems have the right to the best that education has to offer and this orientation holds the promise for more meaningful and durable behavior change in a context of understanding, of respect, and of valuing the humanity of all children.

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ORIENTATION & MOBILITY FOR YOUNG CHILDREN WITH MULTIPLE DISABILITIES

by Diane Fazzi

Young children with multiple disabilities may experience significant challenges in a number of developmental areas, including: vision, hearing, motor skills, communication, language, behavioral, and intellectual abilities (Bailey & Head, 1993). Each of these areas can have an impact upon the child's ability to move about the environment safely and efficiently.

The goals of orientation and mobility (O&M) for young children with multiple disabilities are to enhance each child's sense of orientation to the world around him, and to develop a means for supporting each child's ability to move about and explore the environment freely and safely. O&M must be an integral part of the specialized curriculum for infants, toddlers, and preschoolers who are visually impaired (Hill, Rosen, Correa, & Langley, 1984) as well as for young children with multiple disabilities.

Traditionally, O&M Specialists served school-age, academic students. More recently, a greater focus has been placed on providing O&M services to preschoolers and children with multiple disabilities, but the literature which addresses this focus is limited (Joffee & Rikhye, 1991). Furthermore, some orientation and mobility specialists may not be trained to work with young children with multiple disabilities. The purpose of this chapter is to highlight selected strategies that are useful with young children whose multiple disabilities include visual impairment.

THE ROLE OF THE O&M SPECIALIST

The O&M specialist may provide consultant services to family members and other related service providers of young children with multiple disabilities. She may provide suggestions for environmental modifications (placement of furniture, use of color and contrasts, glare reductions, etc.) and simple routes which will increase access to and promote safe exploration and independence within the home or school environment (Joffee & Rikhye, 1991). The O&M specialist may also provide in-service training for families, classroom teachers, and related service personnel in proper guide techniques and other basic skills which children need to get around. Observations in the home are especially important, as they afford the O&M specialist the opportunity to assess the real-life travel environment of the young child with multiple disabilities (Bailey & Head, 1993). Parents usually want to receive concrete information on techniques for enabling their child to move about safely (Joffee, 1988). For example, the O&M specialist may model correct positioning for helping the child to use a push toy for moving about a fenced yard.

The O&M specialist may provide direct instruction in the preschool child's home or school community. Direct O&M service is most common when the child is ambulatory and beginning to require formalized O&M skills and training. Classroom teachers may refer children who are having difficulty getting around the classroom and/or school environment for an O&M assessment. The O&M specialist will typically observe the child functioning in his natural environments, and complete a formal O&M assessment if appropriate. For children receiving direct O&M service, the classroom teacher and O&M specialist should communicate regularly regarding the skills, techniques, and routes which can be incorporated within the daily routine, as well as the most effective means for reinforcing those skills when the O&M specialist is not present. The following information should help familiarize classroom teachers with basic skills and techniques that O&M specialists may use when working with children with visual and multiple disabilities.

ORIENTATION & MOBILITY TRAINING

To meet the complex needs of the young child who has multiple disabilities, O&M training may address the following areas: sensory skills, concept development, environmental and

community awareness, and formal O&M skills (Ferrell, 1979; Hill, Rosen, Correa, & Langley, 1984; Hill, Dodson-Burk, & Smith, 1989).

Sensory skill development includes attention to visual, auditory, tactual, and olfactory senses. The O&M specialist can perform a functional vision assessment related to movement in indoor and outdoor environments. This assessment should be done in conjunction with a teacher certified in visual impairment, and with consultation from the child's eye care professional.

Although a great deal of emphasis is placed upon optimizing each child's functional vision, all of the senses are important and can be used for orientation and mobility purposes (Anthony, 1993). The O&M specialist should work to enhance the young child's ability to process and utilize all relevant sensory information for independent movement. These objectives can often be incorporated into the daily school or family routine. For example, visual tracking can be practiced during feeding time and tactual and olfactory senses can be enhanced during cooking activities and family shopping trips. Concept development related to independent orientation and mobility is another area addressed. Anthony (1993) identified areas of concept development that are of particular importance in O&M including: body imagery, physical and functional properties of objects, spatial relationships, and environmental concepts. Body imagery concepts can be developed during bathing and dressing times in the home, and reinforced through age-appropriate games and activities such as "Simon Says." These early foundations will assist children in developing a clearer understanding of how their bodies actually move through space. Concepts related to size, shape, color, texture, contour, and function are important to children's understanding of the world around them. Concept learning can be facilitated through repeated concrete experiences with actual objects in the environment (i.e., touching and smelling the flowers, trees, and fallen leaves while on a nature walk).

Opportunities for exploration of the environment are essential to developing spatial concepts and spatial relationships. It is important to provide stability and structure within the environment (i.e., toys stored in the same place, furniture remaining in expected locations). With ample opportunities for exploration in stable environments, the young child with multiple disabilities can enhance his understanding of spatial relationships in familiar environments and form the foundation for later orientation in unfamiliar travel environments.

Environmental and community awareness cannot be realistically achieved without direct experiences in community environments. Exposure to the community should begin at an early age. Formalized experiences in the community (e.g., learning to use a long cane to walk around the neighborhood block) and informal opportunities (e.g., a trip with Dad to the post office to buy stamps) can contribute to the young child's awareness and understanding of the community in which she lives.

FORMALIZED O&M TRAINING

Formalized O&M skills include techniques which are used to promote safe and efficient movement in the environment. These skills are often introduced when a child demonstrates the ability to move about on her own. For young children with multiple disabilities, adaptations may be made in the prescribed techniques to meet individual needs for movement in various environments.

Guide Techniques

One option for getting from place to place is to utilize the assistance of a sighted or human guide. The visually impaired traveler typically grasps the guide's arm just above the elbow and maintains a position one half step behind the guide. The traveler is responsible for actively interpreting the guide's body movements (i.e., right and left turns; steps up and down) as they travel from one place to another. A modified grasp may be used lower on the guide's wrist or even on the guide's extended fingers depending on the child's height and the height of the

Example of sighted or human guide technique.

guide. Physical prompting may be necessary to assist children who have difficulty initiating or maintaining a good grasp.

Regardless of modifications in technique, the guide should maintain a positive expectation for the young child to actively participate in the process. Holding a young child by the hand is very natural, but it will not be beneficial to the child to be led around by the hand in a passive fashion. Proper guide techniques should be used consistently with all teachers and staff, family members, and peers in order to provide ample opportunities for practice and mastery of the skills.

Protective Techniques

There are two forms of protective techniques. The first is called upper forearm protective technique. The child can protect his or her upper body from head and chest level obstacles by bending the arm at the elbow and holding it across the body, parallel to the floor and at shoulder height, with the palm rotated outward. The second technique is called lower body protection and guards the body from waist to upper leg level obstacles. This technique is performed by extending the arm diagonally across the hip area with the palm facing inward.

These techniques are limited in the amount of protection provided (Fazzi & Pogrund, 1992), but young children should be encouraged to use both of these techniques when moving about in open spaces if they are not utilizing a mobility device. Protective techniques are more effective and safe when used in conjunction with a long cane or other mobility device.

Protective techniques are not typically used in familiar areas, but a child should be able to use either technique upon request as situations occur that require protection in familiar settings (i.e., a head-level cabinet door is left open, or a chair is left in the child's path). Upper protective technique is especially important for young children to utilize when bending over to search for a dropped object or toy. In order to protect the head from bumps on table edges and counter tops, the child must be encouraged to use upper protective technique as she stoops down to search for an object or toy. Lower protective technique can be particularly useful when a child is negotiating areas with an abundance of tables, desks, and chairs.

Trailing Technique

Trailing is a method of travel that can be used to get to a desired location while maintaining contact with a surface. This means of travel is

Example of upper forearm protective technique.

Example of trailing technique.

commonly taught to young children with multiple disabilities to facilitate orientation by memorizing landmarks located along a frequently traveled route (e.g., from the classroom to the bathroom).

Traditional trailing technique is demonstrated by extending one's arm at a 45 degree angle in front of and to the side of the body with a loosely cupped hand following the trailed surface. Trailing can be used to locate an object or destination and to maintain orientation and a straight line of travel (Fazzi & Pogrund, 1992; Anthony, 1993). Young children frequently demonstrate many variations of the trailing technique, including modifications in arm and hand positioning depending upon maturity and motor capabilities. A greater degree of safety (from doors slightly ajar and unexpected obstacles) can be assured by combining the trailing technique with the upper forearm protection or long cane. Trailing techniques are often used in school hallways, but may also be used at home along furniture or wall surfaces.

Negotiating Open Spaces

One of the biggest disadvantages of teaching young children with multiple disabilities to primarily use trailing for routes is the resulting dependence upon contact with surfaces for independent travel. Not all children with multiple disabilities will need to consistently trail a surface in order to maintain orientation. Opportunities to practice and develop skills for traveling through open spaces are necessary for travel in a variety of situations.

To safely and efficiently negotiate open spaces, the child must be introduced to an appropriate mobility device for protection from obstacles and drop-offs. In addition, traveling through open spaces will require the child to rely more heavily on auditory and other sensory cues for orientation. The O&M specialist must carefully plan to incorporate these opportunities and skills within the child's lesson sequences and daily routines.

TOYS

A variety of toys and objects have been used as mobility devices with young children who are blind. Some may be used in conjunction with a sighted person or as a transition from a sighted guide to independent movement (Clarke, 1988).

- Hula Hoops can be used as a bumper when held in front of the child while walking or held simultaneously by child and guide.
- Rubber rings can be held by both child and guide (with guide positioned in front) to transition from walking with a guide to more independent movement.
- Toy shopping carts can be used by the child in a familiar environment without drop-offs. The shopping cart can serve as a bumper from obstacles in the child's path.
- Push toys with wheels (e.g., bubble poppers) can also provide some bumper protection from obstacles if they are held in front of the child. Push toys can also serve as probes to find interesting objects, landmarks, or destinations.
- Tricycles provide bumper protection from obstacles found on a playground, but should only be used with supervision in areas without drop-offs and hazards (Fazzi & Pogrund, 1992).

MOBILITY DEVICES

When the child demonstrates the ability to move about the environment, it is time to consider the appropriateness of a mobility device. The mobility device will provide protection for the young child who will be moving out into the world with increasing independence. The device chosen may serve as a bumper for obstacles in the child's path, or as a probe to locate or contact interesting things along the way, or it may serve as both.

There are many factors to consider when selecting a mobility device, including: ability to hold a device in some fashion; ability to maintain balance; motor abilities; attention span and related behaviors; general visual functioning, and attitude towards and motivation for movement in the environment. Families may give input regarding the choice of mobility device(s). Family members can talk to the O&M specialist regarding possible mobility devices and how they might reinforce their use in the home and community.

Long Cane

The long white cane is one mobility device that can be utilized by a young child with multiple disabilities. The long cane has been successfully used by independent travelers for many years, including adults, school-age children, and individuals with multiple disabilities.

A child may be a candidate for a long cane if he or she can hold the cane in some fashion and can walk independently with good balance (Pogrund & Rosen, 1989). If the young child has physical disabilities or an unusual gait pattern, a physical therapist should be consulted before introducing the long cane. Canes vary in size, weight, and manufacturing material. O&M specialists have utilized a variety of cane grips and tips with young children with multiple disabilities, including: bicycle handle bar grips; markings on grips for correct finger placement; metal glider tips; wheel coasters as tips; and mushroom- and marshmallow-shaped tips. These adaptations are made to change the weight distribution of the cane, the ease of grasp, and the ability of the tip to glide to accommodate the individualized abilities and needs of the child.

A child may be a candidate for a long cane if he or she can hold the cane in some fashion and can walk independently with good balance.

It is not necessary that the child demonstrate a particular level of proficiency in basic skills, such as sighted guide or trailing, prior to starting work with the long cane. Both basic skills and cane skills can be worked on together in O&M lessons.

ADAPTIVE MOBILITY DEVICES

Over the years, O&M specialists have incorporated a variety of mobility devices into lessons for young children with multiple disabilities. The primary purpose of introducing any type of mobility device is to provide a bumper from obstacles in the environment. Adaptive mobility devices can be divided into

Some children will move through open spaces more rapidly when using an adaptive mobility device because of a greater sense of protection.

two categories: (1) objects and toys utilized as mobility devices, and (2) devices specially designed for mobility purposes.

A variety of specially designed adaptive mobility devices are being field tested and utilized across the country (Witte, 1993). They are frequently called pre-cane devices, which is a misnomer, because many O&M specialists incorporate both long cane and adaptive mobility device instruction within O&M lessons simultaneously. Polyvinyl chloride (PVC) pipe is a common construction material for many adaptive mobility devices. Curved tips, tubed rollers, caster wheels, and two-handed handlebar grips are common features for these types of devices. These devices serve a primary purpose as a bumper, but those with wheels should be used with caution. Caster wheels may propel mobility devices off of drop-offs encountered by the young child. The momentum may or may not carry the young child forward down the stairs or off of the curb. These devices should be used in selected environments and with close supervision from a knowledgeable adult.

Adaptive mobility devices are typically held or pushed in front of the child and often require a two-handed grasp. They are frequently used for movement in open spaces. Adaptive mobility devices have been used in games of tag with the child locating the instructor by the sound of his or her voice. Some children will move through open spaces more rapidly when using an adaptive mobility device because of a greater sense of protection. Depending upon the needs and abilities of each child an O&M specialist may use an adaptive mobility device in addition to a long cane or as a transition to a long cane. If the long cane will be the eventual mobility device of choice, positive attitudes for its use must be established early on.

SPECIAL CONSIDERATIONS

There are many challenges inherent in providing appropriate O&M services to young children who are blind or visually impaired. Those challenges may be compounded when working with the young child who has multiple disabilities. Special considerations may include: physical and other health implications, varying modes of communication, and challenging behaviors.

PHYSICAL AND OTHER HEALTH IMPLICATIONS

The young child who is visually impaired and has physical or other health impairments is faced with additional challenges to independent mobility. When physical ability or stamina to move through the environment are in question, it is necessary for the O&M specialist to work closely with physicians, physical and occupational therapists, adaptive physical educators, teachers credentialed to serve children with physical disabilities, and other related professionals to assure the development of an appropriate orientation and mobility program. The program should be challenging without being detrimental to the child's physical development or health maintenance.

Orientation and mobility instruction is appropriate for young children who are visually impaired and who also utilize an orthopedic device, especially if that child is able to move about the environment independently while using the prescribed device. For children who are able to independently operate a manual or electric wheelchair, the O&M specialist may suggest adaptations for the wheelchair (e.g., curb feelers) to enable the child to trail along a wall surface and maintain independent orientation in a safe environment. Other safety adaptations can be made for young visually impaired children who use orthopedically prescribed walkers, canes, or crutches, but each adaptation should be made on an individual basis and with the consultation of a physical therapist.

MODES OF COMMUNICATION

Successful O&M instruction is not dependent upon a child's language ability, but is certainly more effective when the instructor and student have common means of communication. Children with delays in receptive and expressive language may benefit from modeling, nonverbal forms of communication, and physical prompting in O&M training (Pogrund & Rosen, 1989). O&M specialists may use basic sign language or tactile signing skills to communicate with young children who have both vision and hearing losses. The O&M specialist should work closely with family members and other professionals to assure that they are using the same signs on O&M lessons that are used at home or at school. Children who use communication systems should be encouraged to use them on O&M lessons as well. For example, a communication board can be used to interact with a shop keeper during community O&M lessons. Lessons in the community afford many functional opportunities for young children to make choices and express their needs.

For young children who can use pictures, drawings, modified symbols, or who can use beginning braille skills, a mobility notebook can be utilized as part of a communication system for O&M lessons. The notebook can be

QUESTIONS?

Questions to ask an O&M specialist who is providing consultation services for a child in your preschool class...

1. How should I arrange my classroom (e.g., furniture and rugs) to make it easy and safe for the child to move about?
2. Are there any specific considerations (safety and others) for facilitating the child's orientation and mobility from the classroom to the playground? Are there any safety considerations for playground activities or equipment?
3. Where should instructional materials (e.g., crayons, paper, scissors, and toys) be stored and located so that the child can find them easily?
4. How should I familiarize the child to her new classroom?
5. How can the other children in the class be encouraged to assist the child with classroom and outdoor activities that require exploration and movement?

Questions to ask an O&M specialist who is providing direct services to a child in your preschool class...

1. Which O&M techniques should the child be using in the classroom? What about on the playground? How can I reinforce his use of proper techniques?
2. Which route should the child use when travelling to other places (e.g., bathroom, cafeteria, office, and playground) in the school?
3. What landmarks should the child use when travelling to other places (e.g., bathroom, cafeteria, office, and playground) in the school?
4. When and where should the child use his cane?
5. If he should use his cane on the playground, where should he store it while playing?
6. How can the other children in the class be encouraged to facilitate the child's O&M skills, such as acting as a guide?

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designed by the O&M specialist in conjunction with the speech therapist or classroom teacher, or by the child as a part of the lesson sequence. Mobility notebooks can contain information related to concepts, objects, or landmarks in the environment. For example, the child can pick a leaf from a tree to be used as a landmark on a specific route. That leaf is attached to an index card which the instructor gives to the child to communicate travel to that landmark. Index cards are added as the route is expanded, and the child uses the cards to recall the entire route, landmark by landmark.

CHALLENGING BEHAVIORS

Young children who have multiple disabilities may exhibit behaviors that interfere with their ability to move in the environment. Behaviors such as rocking, eye-poking, fidgeting, and tantrums can be counterproductive to O&M lessons. In order to reduce the chance of disruptive behaviors during lessons, the O&M specialist should plan for lessons that are: age-appropriate; stimulating without being frustrating; matched to attention span; full of opportunities for success; socially reinforcing, and highly motivating for both child and instructor. For example, a young child who is insistent on engaging in eye-poking may not be willing to hold a long cane while trailing. When interfering behaviors are present across settings they can reduce the young child's overall ability to move about the environment.

The instructional team, together with the family, should work to identify the function of the behaviors. The behaviors could be communicating a need for more attention, a need for greater sensory stimulation, or a need to reduce sensory stimuli. Once the function of the behaviors is identified, the team must work to reduce interfering behaviors and to replace them with acceptable behaviors. For example, self-stimulatory behaviors such as eye-poking may be reduced when a young child is actively involved in using a mobility device to explore the environment if the activity is providing the needed sensory stimulation.

If a young child pinches a guide's arm while traveling, the O&M specialist should observe the child traveling with various guides and record the child's pinching behavior at different times during the day. When the variables that seem to influence the pinching behavior have been identified, the instructional team can define the function of the pinching behavior (i.e., communicating discomfort, frustration, need for attention or escape). The O&M specialist may then need to make some suggestions to assist the guide in helping the child feel more comfortable and less likely to pinch the guide's arm. Suggestions may include: changing the stride and pace of the guide, varying the position of the guide's arm, or even wearing long instead of short sleeves. A child may have more success traveling with guides in the afternoon following lunch. This information can be used to optimize the child's success by reducing the occasions for traveling with a guide in the morning. In addition, praising appropriate behavior must always be encouraged.

If the child's behavior was consistent across guides and time periods, the O&M specialist may need to suggest alternatives or provide the child with choices for travel in which the child might be more comfortable (e.g., using an adaptive mobility device to travel routes more independently). Short periods of travel with a guide could then be interspersed between activities which were highly motivating and successful for the child. Regardless of the specific approach, positive behavior support plans must be carried out with consistency by all team members to be truly effective.

SAMPLE O&M LESSON

Rita is a four-year-old totally blind preschooler with multiple disabilities. She is nonverbal and engages in some self-abusive behaviors. Although Rita is non-ambulatory, she is beginning to show some interest in operating her own wheelchair.

Initially, Rita was encouraged to develop O&M skills by using her wheelchair in conjunction with learning a simple, functional route from

the classroom to the playground. The route was selected because it was free from drop-offs to ensure Rita's safety during travel. Curb feelers were attached to the wheelchair to contact the wall surface while traveling along the route.

O&M lessons are only 15 minutes in duration to match Rita's stamina and attention span. Although Rita is encouraged to operate her own wheelchair for short, two-minute periods, it is not the primary objective of the O&M lessons. Increasing Rita's awareness of the environment is emphasized, including identifying landmarks along the route from the classroom to the playground. The bulletin board next to Rita's classroom is a natural landmark used to help Rita distinguish her classroom from other rooms in the building. When a natural landmark is unavailable, a landmark is placed in an accessible spot for Rita to use. For example, a tactual art project made by Rita was put on the wall where Rita's hand would contact it; a bell put on the baseboard jingled when the curb feeler brushed past to signify that her classroom was near.

To increase Rita's interest in touching the wall surface, tactile bulletin boards were created by Rita and her classmates. The O&M specialist devised games for Rita to actively look on wall surfaces for interesting surprises, such as balloons and bells. Physical prompting is used to help Rita learn to trail and explore the wall surface. It will be reduced over time and replaced with verbal prompts until Rita trails independently.

The O&M specialist will work collaboratively with the instructional team to identify the purpose for Rita's self-abusive behaviors. The O&M lessons and expectations for independent travel for Rita are adjusted to increase Rita's comfort with her ability to explore and move about the environment, and to decrease the time that Rita is engaged in self-abusive behaviors. O&M activities which frustrate Rita will be reduced as much as possible and interspersed with alternative, highly motivating activities.

As Rita begins to experience success in her O&M lessons, the O&M specialist will find ways to incorporate the skills and route travel within her daily routine. The O&M specialist will share Rita's successes with classroom teachers and assistants, and model strategies for reinforcing skills throughout the day. Rita's O&M successes will be more socially reinforcing when she is able to move about her school alongside peers with increasing independence.

Lesson plans and interventions in O&M are aimed at creating positive movement experiences for young children who are visually impaired with multiple disabilities. Positive experiences may lead to a reduction in problematic behaviors and an increased interest in and ability for exploring the environment. O&M, with its emphasis on movement, exploration, and independence, can assist children in developing an appropriate repertoire of behaviors that can be positively used throughout daily life.

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OCCUPATIONAL THERAPY FOR YOUNG CHILDREN WITH MULTIPLE DISABILITIES

by Susanne Smith Roley

Occupational therapy is concerned with maximizing an individual's potential for age-appropriate functional behaviors through the use of purposeful activities. Occupational therapists may work with children who are visually impaired or blind because a loss of vision impacts on a whole array of daily life activities, from learning an activity through observation to visually directed hand use. Every child with a severe visual impairment is at risk for difficulties in the ability to perform daily life tasks optimally. Occupational therapy is warranted if there are functional or performance deficits.

An occupational therapist (OT) views behavior as the end-product of sensory processing and other internal neural processes (Case-Smith, 1993). The purpose of this section is to provide an overview of occupational therapy for young children whose multiple disabilities include visual impairment. The interventions described should be implemented with an individual child only under the supervision of an occupational therapist. Specific terms related to occupational therapy are defined in the glossary.

ASSESSMENT

A thorough sensory assessment by an OT is needed to examine the child's ability to modulate sensation, discrimination and perception of sensation, and defensive reactions to all aspects of the sensory environment (Ayres & Tickle, 1980). Motor assessments include analysis of reflexes, quality of movement, motor planning, and oral/postural/ocular control in addition to traditional skill level assessments for fine and gross motor abilities. Depending upon the medical history of the child and the causes of the visual impairment, a wide range of other symptomatology may be present. Often there are motor delays. If reflexive development is abnormal in conjunction with high tone or fluctuating tone, it is suspected that this will

impact motor performance and mobility patterns. When there are typical reflexes and either low or normal tone, it is suspected that the sensory impairment is the probable cause of delayed mobility patterns.

RENE

Rene was born blind. One of eight children, she spent hours in her crib alone, the only place she did not cry constantly. She did not like to be held or moved. In her crib she lay and rocked her head side to side. Her mother took care of her physical needs but did not try to play with her because it was so distressing.

When the OT first began to work with Rene, she had normal reflexes and low tone in the absence of any other neuromotor deficits. At age two she had no independent mobility, no functional language, and extremely poor social abilities. She did not play with objects or people. She spent most of her days sleeping or lying on the floor, swinging herself side to side, or masturbating. The early intervention team questioned if the severity of her behavior could possibly be due to the sensory deficit in the visual system alone. The opinion of the OT was that if her severe sensory defensiveness could be diminished, Rene would begin active exploration tactually and motorically. It was felt that she was capable of crawling and walking. With a rigorous sensory diet (Wilbarger, 1984) from program staff and therapist, respecting Rene's tolerance levels but also breaking into the deprivation cycle, she began to move and handle objects with her hands. She began to intermittently tolerate swings in the lap of a therapist and accept deep pressure and tactile input through brushing to her hands and feet.

When Rene was three years old, a physical therapist (PT) was consulted regarding her motor development and it was felt that she had the capacity for independent mobility. A walker was ordered for her and she began to move with the walker as an aid for balance and protection through space. By age four she was walking independently and finding play equipment in the play yard on her own. As she began moving through space on her own, some functional language began to emerge. She also began to relate to her caregivers in more positive ways.

Intervention

It is necessary, as in Rene's case, for the child and primary caregivers to be involved in the planning and intervention process. Direct intervention is most effective when augmented by classroom adaptations, playground activities, and home programs (Dunn, 1991) that optimize the home and classroom environments (Hanft, 1989). Furthermore, skill develops best in the context of self-motivated, purposeful activities (Ayres, 1972; 1979). It may take some trial and error and skillful communication to identify specific motivators for a visually and/or multiply impaired child. Any intervention should be noninvasive and nonnoxious. The therapist must be constantly vigilant to signs and cues from the child to determine the child's comfort level.

The visual system and vestibular system interact to provide a total sense of movement through space.

SENSORY INTEGRATION

Sensory integration theory and therapy addresses sensory processing issues and their related motor processes (Ayres, 1964; Porges, 1993; Wilbarger & Wilbarger, 1991; Fisher, Murray, & Bundy, 1991). Children with sensory modulation difficulties who try to self-regulate frequently use self-stimulatory behaviors such as self-rocking, self-talking, and hand-flapping. These may help the child to stay calm but may not allow learning to take place.

Another view of self-stimulatory behaviors is that they replace the sensory information that the child is not getting through typical experiences. In either case, assessing what the child is attempting to provide the nervous system and replacing it with a socially appropriate behavior is the key to extinguishing self-stimulatory behaviors. Some

examples would be to provide a child's size rocking chair for the child who self-rocks, or bouncing and jumping activities to reduce arm flapping behavior.

In order for new learning to take place, ideally, the child must be calm and alert. If she is over-stimulated and shuts down (in some cases the child may in fact appear to be under-aroused), calm her through "hug-like" pressure, slow rocking, and singing. If under-aroused, brisk touch can be used to stimulate and alert. If uncertain as to the level of arousal, assume that

A defensive child will not want to use her hands to explore her environment.

the child is over-aroused and provide calming sensations. If the child does not arouse, consult the therapist. Arousal levels may fluctuate rapidly. If a child is chronically ill, it is difficult to find this optimal level of arousal to begin treatment. In this case, find something that is pleasurable and begin with this activity. It may be as simple as singing a nursery rhyme or a wind-up music box. If there is even one toy or activity which facilitates a calm, alert, and content state, often the child can tolerate a little work on the difficult areas as well.

ORAL-MOTOR

Self-calming usually begins in the oral area with activities such as sucking on a bottle, a thumb, or other object (Oetter, Richter, & Frick, 1993). There are many oral motor toys such as whistles, kazoos, blow toys, and tiny straws that can be introduced for oral-motor development. Sensory defensive children may not be able to tolerate oral stimulation, so their ability to calm themselves is impeded. Proceed cautiously if the child shows an aversion to oral stimulation. Feeding is severely impacted in sensory defensive children (Morris & Dunn Klein, 1987). They may reject any textures, tastes, or the introduction of solid foods. Addressing the sensory defensiveness with an appropriate sensory diet is a gentle and more globally effective approach.

MOVEMENT

The visual system and vestibular system interact to provide a total sense of movement through space. When either system is not functioning, the other is compromised. The cost of sensory defensiveness for children with a visual impairment cannot be overstated. A defensive child will not want to use his hands to explore the world, do fine motor tasks, or trail (Royeen, 1985; 1986). He may be extremely fearful of input from any combination of sensory channels.

Defensiveness can be addressed by slowly introducing touch or movement coupled with hugging-type body pressure and light pushing and pulling on the joints. Children with high, fluctuating, or low tone need to be handled cautiously when doing any activity involving their joints. Bouncing on a ball, inner tube, or trampoline is a helpful way to get proprioceptive joint input. If the child is fearful of movement through space, promote slow rocking with total body contact to the floor. Specific techniques for handling sensorily defensive behaviors need to be discussed with the therapist for each individual case.

The brain processes an enormous amount of movement through watching things move in the environment (Fisher et al., 1991). The child with low or absent vision usually requires more than the normal amount of movement to facilitate the balance and gravity reactions that are intrinsic to self-propelled movement. The child with no or low vision may develop compensatory movement patterns characterized by a lack of smooth movement through the trunk so that he minimally has to move off his center of gravity. Without vision to aid in head, neck, and eye control, there may not be sufficient input for this child to hold his head in proper alignment with his body. When a child does not have vision to guide his head movements to face forward, he will frequently hold his head down, or turn with his ear forward. Movement input is used by therapists as an effective way to stimulate head, neck, and eye control, orientation to gravity, and muscle tone. Up and down or back and forth movements can be provided by many different kinds of playground equipment such as swings, rocking bridges, and trampolines.

Be constantly vigilant to the cues of the child. A child may have delayed processing of sensory information and what seems to be fun in one moment may evoke a strong aversive reaction in the next. This will vary from child to child but may also vary greatly in the same child depending on how he feels at a given time.

If children do not have independent mobility, it must be provided for them. When providing services to a blind preschooler with multiple disabilities, the occupational therapist should consult with the family, teacher, physical therapist, and orientation and mobility specialist to develop an appropriate plan. Infant walkers are not recommended although there may be times that a visually impaired child may benefit from the security of a walker while moving through space. In this case it may be appropriate for a child who is beginning to stand and cruise around furniture to use a walker to move out into space for short periods under supervision. Children with physical disabilities may require orthopedic walkers.

Without vision to aid in head, neck, and eye control, there may not be sufficient input for this child to hold his head in proper alignment with the body.

Some children may seek out movement by perseverative spinning. If a child chooses to spin on a toy (for example, a Sit N Spin) the child needs to be monitored carefully. This type of rotation can not only cause a child to get dizzy but can also affect heart rate and respiration. If a child is engaged in spinning, a responsible adult needs to monitor that child closely for adverse signs such as nausea, blanching, sweating, or loss of consciousness. It is *not* recommended that passive rotational activities be provided for any child, especially if he is non-ambulatory or non-verbal.

A child with physical disabilities may require an orthopedic walker.

Helping to put chairs on tables at the end of the day is a functional activity that increases a child's self concept and body image.

POSITIONING

A child who is nonmobile or has neuromotor involvement needs constant attention to her body position and muscle tone (Campbell, 1984). Handling techniques and range of motion techniques for children with neuromotor impairments should be monitored by the OT or PT on the educational team. Neurodevelopmental therapy has very precise techniques for handling and facilitating movement patterns (Bobath, 1980; Boehme, 1990). Try to vary a child's body position between sitting, side lying, prone, supine, and standing throughout the day. Pillows and mats are available commercially to aid in positioning. The goal with positioning is to get the child to be comfortable, symmetrical, and bilateral. A functional head position is in 30 degrees of neck flexion with the ability to turn the head from side to side. Shoulders should be slightly forward so the child can bring the hands together and to the mouth. The hips in the sitting position should be 90 degrees or so with the legs slightly apart. A child's feet need to be in full contact with a firm surface when she is in a sitting position. A well-supported, functional sitting position is critical when engaged in eating activities. Feeder seats which come in different sizes help to maintain this type of position for children who do not have sitting balance. Feeder seats will often maintain a child in a reclined position. Positioning so that the child is in hip flexion and forearm weight-bearing provides a more functional position if the child can tolerate it. A small table which fits well in front of the child can be added for support. This table can then be used to present objects or activities for manipulation or tactile exploration.

FUNCTIONAL HAND USE

Object manipulation and functional hand use are frequently delayed in children with visual impairments and multiple disabilities due to the lack of visually directed hand use. However, sensory defensiveness can also contribute to poor use of the hands. If a child avoids contact with various textures and surfaces then the amount of tactile exploration is limited. Self-help skills such as buttoning and the eventual reading of braille will likely be impeded. In addition, poor hand use will limit orientation and mobility skills such as trailing and grasping a cane.

Minimizing defensiveness and facilitating appropriate tone and skill acquisition usually happens together or alternately so that an optimal arousal level for learning can be sustained. Inviting active voluntary exploration with the hands can be accomplished through the use of discrimination activities and the introduction of varied textures and manipulatives.

AMY

Amy, an eight-year-old girl who had an 80 percent restricted visual field in one eye and total loss of sight in the other eye, functioned quite well in the regular classroom environment. She was referred for OT because she was having difficulty with self-feeding and had a poor body image. She had an extremely poor body scheme due to poor joint and muscle sensation. She knew where her mouth was supposed to be but had to "look for it" each time her hand went to her mouth. Additionally, she could not figure out how to move her body relative to other things in the environment so that she frequently bumped into things. Her initial self-drawing was a large head with sticks for arms coming from the head.

The OT and Amy spent a lot of time pushing and pulling heavy objects, rearranging furniture, and building large towers to give her muscles

QUESTIONS?

Questions to ask an occupational therapist about a child whose multiple disabilities include visual impairment...

1. What kinds and levels of stimuli can this child tolerate?
2. What precautions are needed for a seizure-prone child during stimulating activities?
3. Why does this child dislike getting his hands dirty or using any messy substance. What should I do?
4. How should we respond to a child who seeks excessive amounts of physical contact?
5. What activities, materials, and toys would encourage this child to use both hands for active exploration?
6. What positioning and handling techniques should I use with a child who has high tone, low tone, or fluctuating tone?
7. What activities would encourage this child's motor development?
8. Why does this child prefer bland and pureed foods?
9. What can be done to reduce this child's drooling?
10. What can be done to encourage this child to keep his hands out of his mouth?
11. How can I facilitate this child's appropriate eating skills?
12. What strategies and kinds of clothing would assist this child in being more independent in dressing and toileting?
13. How can I facilitate this child's play development?

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and joints extra input. As her body scheme gradually began to improve, jumping and climbing activities were added. Towards the end of her therapy, her self drawing showed a head with detailed features, and a body with limbs, hands, and feet in appropriate proportions.

Children with visual impairments, like Amy, may have a distorted perception of themselves in relation to space and objects. The ability to imitate is usually acquired by watching and then doing. When watching is impeded, the ability to do becomes compromised. Acquiring a sense of movement kinesthetically or tactually takes time and effort. When vision does not give feedback about one's body and the world, children may acquire only a partial image or partial inner scheme of the total activity.

PRAXIS

Praxis is the task of conceptualizing a plan of action: neurologically organizing the body for the readiness to perform the action, preparing the sequencing and timing of the activity, and then executing the motor activity itself. Praxis can be facilitated through language if the child processes language adequately. Language is intrinsically sequential. Any motor process can be broken down into tiny steps so that a child can learn to do things that may initially seem overwhelming. If language processing is inadequate, the child must be able to feel the activity through her own movements at a kinesthetic level.

Sequencing is an essential aspect of understanding daily, weekly, and monthly routines. Providing a child with a predictable structure of events in short time intervals is very necessary so that she has a sense of control. Much of the normal sequencing of events is generally centered around self-help such as dressing, eating, and cleaning up. These are optimal times to incorporate sensorimotor principles with functional skill development. Using language to talk about what is coming up next will help transitions. If language is too difficult, environmental cues can be used for each change in the day to allow the child to anticipate the next event. For example, provide the child with familiar spaces in each transition so she knows where she is starting from to begin exploration.

Praxis is required for planning and doing functional skills necessary for taking care of one's self in increasingly complex ways. If a child can build sensory motor foundational abilities in the early years, learning academic, functional, and life supporting tasks will be easier.

GLOSSARY OF TERMS

Arousal
An individual's state of being awakened or excited into action.

Joint traction
Pulling or tugging on a part of the body so that the joint is stretched.

Joint compression
Pushing or leaning into a part of the body so that the joint is pressed together.

Motor planning
To automatically figure out the steps to performing a given action and do it.

Neurodevelopmental treatment (NDT)
A system of intervention designed by the Bobaths to facilitate more normal movement patterns in children with neuromotor deficits.

Neuromotor deficits
Abnormalities in movement patterns or sequences which are caused by damage somewhere in the brain or spinal cord.

Praxis
The ability to develop a motor plan of action, analyze its feasibility, plan the sequences necessary, and carry out the plan in an efficient manner.

Quality of movement
Grace, ease, and synergy in the movement patterns contributing to a functional movement such as walking.

Reflexes
Movement patterns which are thought to be centrally programmed or sensorily triggered which are the foundation to more consciously driven movements.

Sensory defensiveness
"The overactivation of our protective senses" (Wilbarger & Wilbarger, 1991). This may occur through a single sensation such as the tactile system or through many different sensory arenas.

Sensory diet
The need for a variety of organized stimulation. Much like a dietician recommends an altered food diet to facilitate better health, an occupational therapist may recommend a sensory diet to facilitate a child's health and development.

Sensory integration
A theoretical body of knowledge and system of intervention (developed by Ayres) analyzing and adapting the processing of sensory information for use in appropriate adaptive behaviors.

Sensory modulation
The regulation by the central nervous system of the pitch, frequency, or intensity of a sensory experience.

State regulation
Dependent upon arousal levels, it is the modulation of alertness through one's own nervous system or through environmental stimuli.

Tone
The capacity of muscles to sustain positions.

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Chapter 8

Deborah Chen & Jamie Dote-Kwan

PUTTING IT ALL TOGETHER

The primary responsibility of teachers of young children is to create a responsive learning environment that promotes active participation, addresses individual learning needs, and encourages social interactions. This chapter demonstrates the development of an individualized educational program for one child using the principles and instructional strategies discussed previously.

Jason is a four-year-old who attends a special education preschool class for children with multiple disabilities. As a result of his mother having rubella during the first trimester of her pregnancy, Jason's diagnoses include: a moderate bilateral sensorineural hearing loss, legal blindness, and developmental delays. He had cataracts removed from both eyes and he wears glasses. His records indicate that hearing aids have been recommended but he has never worn them to school.

Jason and his mother live in a one bedroom apartment. His mother works six days a week from 3:00 PM to midnight at a 24-hour grocery store. After school, the bus drops him off at his aunt's house. After his mother gets off from work she gets Jason and takes him home. At that time she changes his clothes for school the next morning and he goes back to sleep from 2:00 A.M. to 6:30 A.M. The school bus picks him up at 7:00 A.M. so he often arrives at school looking tired and disheveled.

Jason exhibits no independent grooming skills, but he goes to the toilet when taken and will not have accidents if taken regularly. He can feed himself with a spoon but spills food on his clothing and table. Jason is low vision. With his glasses on, he can recognize familiar people five feet away. However, he tends to bring small objects and pictures 4-5 inches from his eyes to examine them and can recognize three-inch line drawings of familiar objects. Jason moves around safely and independently in familiar and unfamiliar settings.

Jason communicates through crying, laughing, patting objects, and pulling on an adult's hand. He understands simple one-step requests within the context of the activity (such as "sit down," "come here," or "bring me your shoes") and sometimes responds to his name. He has tantrums frequently when asked to do something that he does not want to do. For example, at the end of recess, he will continue swinging when asked to return to class. When physically removed from the play equipment, he will drop to his knees and scream. He will also run away from adults. Jason is beginning to parallel play. For example, he will sit beside other children in the block area and while they are building a tower and bridges, he will bang two blocks together or knock over stacks of blocks. He will glance at other children but does not imitate or participate in their play.

A *family interview* revealed that his mother's greatest priority is child care. Although she wants Jason "to do well in school," she has limited resources, time, and opportunity to participate in the educational process. Her main concern is to provide for their basic needs and to keep her job. She said, "Jason needs to learn everything and that is why he goes to school."

Since the family interview did not identify specific instructional goals, the teacher asked Jason's mother for permission to contact his aunt. Mrs. Fuller, his aunt, agreed to have the teacher visit one afternoon while Jason was in her care. The teacher explained that the purpose of her visit was to gather information on Jason's interests and abilities in the home

environment. She conducted a family interview to identify home activities and how he participates in them.

As shown in figure 1, upon arrival at his aunt's house, Jason:

- Leaves his backpack and lunch box in the corner by the front door
- Follows his aunt to the bathroom upon verbal request
- Urinates in the toilet and cooperates with her in washing and drying his hands
- Goes to the living room and lies on the sofa with his five-year-old cousin to watch cartoons on television from 3:30 P.M. to 5:00 P.M.
- Eats supper with his aunt and his cousin (Jason prefers sweet foods and will gag himself and vomit if forced to eat any vegetables. His favorite meal is a hot dog, french fries, chocolate pudding, and chocolate milk. Jason uses his sleeve or arm to wipe his mouth. He drinks from a cup without spilling.)
- Puts his cup in the sink after the meal but does not help clear the table
- Goes to play in his cousin's room while Mrs. Fuller does the dishes and cleans up. His aunt indicated "I wish we had a backyard so the boys could play outside."

Based on this portion of the after-school routine, the teacher could identify some critical areas to begin instruction with Jason at school. These include working on self-help and communication skills as outlined in the following section.

Next, the teacher conducted an *ecological inventory* at school. She observed Jason in the preschool class and on the playground. Since

Figure 1

WEEKDAY SCHEDULE

Child Jason **Date** October 1, 1994

Parent/Care Provider Mrs. Fuller (Jason's aunt)

Time	Activity	Description of Child's Performance	Family Priorities
3:30 P.M.	Arriving home from school.	Gets off the bus & walks into the house; leaves his stuff by the front door.	None identified.
3:40 P.M.	Going to the bathroom.	Follows his aunt upon her request; urinates in toilet; aunt washes & dries his hands.	Aunt wants him to go to the bathroom on his own; wash & his own hands.
3:50 P.M.	Watching television.	Lies on the sofa & watches cartoons with his cousin.	None identified.
5:00 P.M.	Eating supper.	Eats with aunt & his cousin; will not eat vegetables, gags & vomits; wipes mouth with sleeve of shirt; drinks from a cup without spilling.	Aunt would very much like him to eat a variety of foods.
5:20 P.M.	Cleaning up after supper.	Puts cup in sink only.	Aunt said that this was okay, her son only does his cup.
5:25 P.M.	Playing with cousin.	Both boys go to the cousin's room; his aunt is not aware of what they do in there; she is not concerned so long as they are not fighting.	None identified.

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her primary concern was his limited expressive communication, she focused on activities related to interaction with others. From these observations and her visit to his aunt's house, she identified how Jason communicates. As indicated in figure 2, Jason's primary purpose for communication is to regulate the behaviors of others in order to request objects and actions. For example, on the playground he stood in front of the child on a tricycle and cried until the child got off. During lunch, the teacher's assistant gave him regular white milk and he pushed the cup over, spilling the milk, and began to cry. He stopped when offered chocolate milk.

In collaboration with Mrs. Fuller, Jason's teacher identified the following possible instructional goals:

- Washing and drying hands
- Going to the bathroom without being prompted
- Setting the table with cups
- Using a napkin to wipe his mouth
- Eating a variety of foods
- Using a spoon without spilling food
- Playing age-appropriate games
- Making choices
- Using signs to indicate MORE and to request food

As shown in figure 3, the teacher completed th checklist for *Prioritizing What to Teach* by collaborating with Jason's mother and identifie the following instructional priorities:

- Going to the bathroom without being prompted

Figure 2

COMMUNICATIVE FUNCTIONS

Name Jason **Date** October 3, 1994

Observer/Interviewer Teacher **Informant** Mrs. Fuller (Jason's aunt) & Observations

Communication Behaviors	Protest	Refusal	Rejection	Request for Object	Request for Action		Situations
Generalized movements							
Changes in muscle tone							
Vocalizations				√	√		On playground equipment.
Facial expressions	√	√	√				When given disliked food.
Orientation				√	√		Leans towards desired objects.
Touching another person				√	√		To request chocolate milk.
Manipulating/moving with another person							
Acting/using objects				√	√		Pats milk carton.
Assuming positions				√	√		Holds hands under faucet.
Going to places				√	√		Stands in front of tricycle & swing.
Conventional gestures		√	√				Pushes away disliked foods & materials.
Depictive actions							
Withdrawal	√	√	√				Lies on ground when asked to go inside.
Aggressive/self-injurious: Gags self	√	√					When forced to eat vegetables.
Other: Echolalia							
One word speech							
One word sign							
Combined words							

- Using a spoon without spilling
- Making choices during mealtime
- Using a communication system

Next, *Discrepancy Analyses* were conducted for toileting, mealtime, and outside play. Figure 4 shows the discrepancy analysis for mealtime.

A team meeting was held to decide on instructional goals and to plan for the implementation of Jason's program. Team members included Jason's classroom teacher (certified in the area of severe disabilities), a teacher certified in the area of visual impairments, a teacher certified in the area of hearing impairments, a speech and language therapist, and a behavior support specialist. Unfortunately, Jason's mother could not attend but his aunt participated in the meeting. Jason's classroom teacher reviewed the findings of the *Family Interview, Ecological Inventory,* and *Discrepancy Analyses* and asked Mrs. Fuller for her impression of Jason's instructional needs. Based on this discussion, Jason's teacher identified opportunities for Jason to make choices; such as deciding between a fruit or vegetable and between chocolate milk or regular milk at lunch. Depending on the food selection, Jason would be required to show a picture or use a sign to communicate his request to the food service person. The teacher decided on a simple adaptation to assist Jason in using a spoon. She would provide a metal spoon with a thick plastic handle for him to use instead of the plastic fork-spoon that came with the school lunch. Mrs. Fuller agreed to use a similar spoon at home. The teacher also decided to implement a daily schedule using pictures to represent activities in order to provide Jason with a predictable sequence of events, opportunities to control what happened next, and a means to communicate about familiar activities.

Figure 3

PRIORITIZING WHAT TO TEACH

Directions: List each activity in the spaces to the right. Answer each question for each activity. 3 = Strongly agree 2 = Agree 1 = Somewhat agree 0 = Disagree	Washing and drying hands	Going to the bathroom without prompts	Making choices at mealtime	Using a napkin to wipe mouth	Eating a variety of foods	Using a spoon without spilling	Playing age-appropriate games	Using a communication system
Is this activity practical or functional?	3	3	3	3	2	3	3	3
Is this activity chronologically age appropriate?	1	3	3	2	2	3	3	3
Is this activity a family priority?	1	3	2	1	3	1	1	2
Is this activity motivating for the child?	1	2	3	0	0	3	2	3
Is this activity achievable based on the child's development?	2	3	3	2	2	3	1	3
Can this activity be taught in the child's natural environment?	3	3	3	3	3	3	3	3
Does this activity occur frequently?	3	3	3	3	1	3	2	3
Can this activity be taught in familiar environment?	3	2	3	3	1	3	2	3
Is this activity a priority for the instructional staff?	1	3	3	1	2	3	2	3
Can this activity be taught safely?	2	3	3	3	3	3	3	3
Total Score/ Possible Total Score = 30	20	28	29	21	19	28	22	29

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It was agreed that the teacher certified in the area of visual impairments would assess Jason's functional vision to identify the optimal size, type, and colors for the line drawings for him to use. She would also consult with Jason's classroom teacher in identifying appropriate distance, position, lighting, and other factors to enhance Jason's visual discrimination and imitation skills. These results would be shared with Jason's family and other members of his instructional team.

The teacher certified in the area of hearing impairments discussed Jason's hearing loss and implications for understanding speech. She identified strategies for encouraging Jason's use of available hearing as well as signs during everyday situations. The team decided to provide opportunities for Jason to listen for his name during daily activities and to encourage sound-making during certain games; for example, "Vroom, vroom" while pushing toy cars. The teacher would contact the audiologist regarding Jason's last audiological report and the recommendation for hearing aids. She would also investigate the possible use of an FM system (an auditory training unit for Jason with a wireless microphone for the teacher) for school-use to increase Jason's discrimination of the adult's voice in the context of other sounds in the environment.

Together with the speech and language teacher, the instructional team identified several signs that would be introduced to Jason: SWING, PLAY, TRICYCLE, CHOCOLATE MILK, EAT, FINISHED, MORE, TOILET. The speech and language therapist also agreed to develop a wallet of communication cards for Jason to indicate needs and make choices. She also decided to identify and structure games and play routines to encourage Jason's turn-taking and joint attention communicative behaviors. For example, adults could facilitate a "follow the

Figure 4

DISCREPANCY ANALYSIS

Name Jason **Date** October 7, 1994

Environment School **Activity** Lunch **Skill Area** Eating

Natural Cues	Skills	Baseline Trial		Discrepancy Analysis	Adaptations
School bell rings.	Goes to lunch area.	–	–	Can't hear bell.	Watch other children line up at door.
Hot food items in an aluminum foil tray in a cardboard box.	Gets cardboard box.	+	+		
Chocolate and regular milk.	Picks the milk desired.	–	–	Cafeteria worker told him his choices he couldn't hear them.	Put choices within reach.
Banana and apples.	Picks the fruit desired.	–	–	Cafeteria worker told him his choices he couldn't hear them.	Show pictures of choices and have him point.
One item in each hand and the cardboard box.	Puts milk and fruit in box.	+	+		
Box is full.	Carries box to table.	–	–	Cafeteria worker needed to verbally prompt him.	Another child could prompt him.
Plastic wrapped fork-spoon, napkin, and straw.	Opens napkins; takes fork-spoon from bag.	+	+		
Aluminum foil covering tray.	Removes foil from tray.	–	–	Foil too hot to touch.	Wait or use napkin.
Plastic fork-spoon and food.	Eats food from tray with plastic fork-spoon.	–	–	Spills food on table and clothing.	Use a real metal spoon and fork with large handles.
Straw and milk carton.	Drinks milk with straw.	+	–	Did not drink regular milk on Day 2.	Provide him a choice of milk.
Mouth is dirty.	Uses napkin to wipe mouth.	–	–	Never uses napkin; wipes mouth with sleeve or arm.	Teach him to use a napkin.
All the food is eaten.	Finishes entire lunch.	–	–	Does not eat vegetables.	Provide him a choice.

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leader" game on tricycles, support Jason's participation with peers during block play, and develop experience story books based on Jason's familiar and favorite activities, such as "What I love to eat" and "Riding on tricycles."

In discussion with the behavior support specialist, the team began to understand and interpret the communicative intent of Jason's challenging behaviors. In addition to clarifying communication with Jason through picture cards and signs, it was decided to alternate table and rug activities with opportunities for motor and physical movement games; to schedule a favorite indoor activity such as snack time after outdoor play; and to allow Jason to refuse vegetables as long as he chose and ate fruit at lunch.

It was decided that the behavior support specialist would develop a plan for understanding and handling Jason's challenging behaviors. Specifically, the behavior support specialist would gather information about and observe Jason's refusal to return to class after outdoor play, and his tantrums when he did not get his way, and his self-gagging behavior.

As a result of the team meeting, a program was developed by using Jason's school day to provide natural opportunities for working on identified instructional priorities. Figure 5 provides an example of Jason's instructional day with strategies for specific objectives and situations.

Jason's program was a result of a careful and systematic process of identifying family priorities and concerns, gathering and analyzing information, and sharing the perspectives of different disciplines. This process created an instructional program which involves Jason actively in meaningful and motivating learning activities.

Figure 5

OBJECTIVES WITHIN ROUTINES MATRIX

Name Jason **Date** October 15, 1994

Objectives	Daily Routines			
	Bathroom	Outdoor Play	Stories/Centers	Lunch
Jason will go to the bathroom upon arrival at school without being prompted.	Daily picture schedule placed near Jason's cubby shows cubby, then toilet.			
Jason will imitate other children's actions on objects.		Encourage Jason to follow children's lead in riding tricycles, going on jungle gyms, slides, and playing ball.	Encourage Jason to engage in playing with other children using blocks, cars and other toys in similar ways.	Encourage Jason to watch other children and follow their lead in opening lunch box, eating lunch, and throwing trash away.
Jason will follow adult directions given signs and picture cues.	Teacher signs TOILET and shows Jason a picture of "toilet."	Teacher signs PLAY OUTSIDE and shows relevant picture at transition.	Teacher signs STORYTIME or WORK and shows relevant picture.	Teacher signs LUNCH and shows relevant picture at transition.
Jason will communicate preferences using picture cards and signs.		Jason will show picture of playground equipment to indicate choice.		Encourage Jason to show picture for food choice and use sign.
Jason will participate in turn-taking games with peers given adult facilitation.		Encourage Jason to play "follow the leader" and circle games outdoors.	Encourage Jason to take turns in storytime, responding to questions and objects that relate to story.	
Jason will respond to his name when called.		Teacher will call Jason when time to come inside.	Call children's names for game: "Who is here today" and Jason has to stand-up when his name's called.	

Chapter 9

Dolly Lastine & Robin Exsted

THE ITINERANT TEACHER AS A CONSULTANT

The previous chapters in this handbook discussed instructional strategies specifically for the classroom teacher working with young children whose multiple disabilities include visual impairment. This chapter represents a shift in that focus to the consultant role of the teacher certified in the area of visual impairments as an itinerant teacher working with classroom teachers. These classroom teachers may be trained and certified in different areas, including physical disabilities, early childhood special education, severe disabilities, early childhood, or elementary education. This chapter has two purposes. First, it identifies communication skills and strategies for consulting with the classroom teacher on the educational program of preschoolers whose multiple disabilities include visual impairment. Second, it provides examples of instructional recommendations made by the itinerant teacher certified in the area of visual impairments for selected children.

COMMUNICATION SKILLS

Communication is the method by which itinerant teachers share their expertise and knowledge as they collaborate with the classroom teacher, family members, or other members of the educational team. Communication involves exchanging information and ideas by verbal and nonverbal means and includes listening and speaking. Without the ability to communicate clearly, even the most knowledgeable teacher will fail in a consultant role. The ability to communicate effectively in both verbal and written form is an essential skill. For many, this is a skill that comes easily and is "natural;" for others, it is a skill that must be developed.

Precise Language

Language that is vague or too general may lead to miscommunication. Concrete statements and questions facilitate clear and open dialogue and eliminate possible ambiguity. Using concrete statements and questions clarifies the information being shared or requested. In the following examples and all subsequent ones, Example B depicts the preferred statement or question.

Example A "I was concerned about Julie's visual interactions this morning."

Example B "I noted during circle time that Julie did not look at you or any of the other children even when they were close to her."

Neutral Language

Part of an itinerant teacher's job involves evaluating situations and suggesting modifications. This should be done without judging the people who work with the individual child. Neutral statements usually promote trust because they convey a nonjudgmental and accepting attitude.

Example A "You show toys and objects to Julie too quickly."

Example B "I've noticed Julie is having difficulty focusing on toys and objects if they are moved too quickly."

Types of Statements

The most common use of statements is to share information or to seek information. Statements can be used to describe, clarify, and guide.

Describe. Descriptive statements like neutral language are most effective when the individual speaking does not add his own evaluative reflections. Because a large part of the itinerant

The itinerant teacher may offer suggestions regarding activities and toys that have texture and sound.

teacher's job is to observe and make recommendations, this is an essential skill for working with classroom staff.

Example A "You should give Julie a verbal and tactile cue before wiping her nose since she can't see your hand coming."

Example B "I notice that Julie flinches and cries whenever her nose is wiped. How can we prepare her for what is about to happen?"

Clarify. Explanations are useful when a consultant is asked to interpret assessment results, share knowledge, or clarify a particular point. As consultants, it is important to become proficient in providing clear explanations.

Example A "You should position Julie close to activities."

Example B "Placing Julie close to the activity will allow her to use her vision, in addition to being close enough to explore it with her hands."

Guide. Statements to guide particular actions tend to be softer in nature and can be used to either explain or advise. Statements that advise can be a way of guiding an action by suggesting someone take action. When guiding, the itinerant teacher offers a suggestion and the person receiving the message makes the decision if he wants to follow the suggestion.

Classroom teacher: "I have $200 to buy some new toys."

Itinerant teacher: "You might want to consider some toys that have texture and sound."

Asking Questions

The itinerant teacher needs to gather information by using effective questions. There are several types of questions according to the response desired.

Closed questions are used when the requested information is very limited, or when the individual wishes to limit the responses.

Example "Would you like to meet before or after school?"

Open questions may elicit a varying range of responses and are effective in promoting interactive collaborative communication.

Example "What would be the best way for me to share suggestions for modifications with the team?"

Questions that provide information usually give more information than they elicit and can be an alternative to using a variety of statements.

Example "Do you think Julie might decrease her light-gazing if we turn her back to the window during circle time?"

Nonverbal Communication

It is also important to remember that nonverbal communication promotes further interaction when body language and verbal language match. Nonverbal language that demonstrates interest in the communication process includes: eye contact, leaning forward, open arm posture, even rate of speech, lower voice pitch, nodding head, and relaxed facial expression. Remember it's not just *what* you say but *how* you say it.

Interactive Listening

Interactive listening is a crucial skill which is optimal for the team approach. Interactive listening not only indicates that the receiver hears what the sender is saying, but accurately understands what she is hearing. With this approach, both are active in the communication process. Communication may break down when one person hears and misinterprets the message being sent and neither of the people involved are aware the misunderstanding exists. The following is an example of interactive listening:

Classroom teacher: "When is your next visit to my classroom?" (voice high pitched, hurried)

Itinerant teacher: "I am scheduled to come in one week. Do you see a need for me to come before that?"

Classroom teacher: "Well, I'm confused about some of the tactual and verbal cueing that we talked about using with Julie."

Itinerant teacher: "Do you feel we need to sit down and talk prior to my next classroom visit?"

Classroom teacher: "Yes, I guess that is really what I mean. I'm not feeling comfortable about how I'm cueing Julie."

Written Communication

Written communication does not have the added advantages of having body language or immediate feedback to indicate whether the message is being understood. Therefore, written reports should be clear and concise to eliminate misinterpretation. Another distinction between verbal and written communication is the ability of the written word to be permanent and to extend over time.

Informal written communication is also useful strategy to supplement face-to-face meetings. For example, a classroom notebook for vision related issues can provide a means and record of communication between the classroom teacher and the itinerant teacher. This notebook can encourage the classroom teacher to record questions as they occur and to discuss them later. In addition, the itinerant teacher can make suggestions and provide answers to specific questions in the notebook.

Formal written communication should have a specific goal in mind, such as discussing educational implications of assessment results. When writing assessment or observation results, be positive and specific. Reflect a positive viewpoint by writing "Julie was able to maintain brief fixation (1-2 seconds) when presented with a black-and-white hand puppet," instead of "Julie did not look at the black-and-white puppet for very long." Having another professional proofread reports for content, clarity, and writing style can be a useful tool for the itinerant teacher. If written communication is identified as a professional development goal, supervisors can also provide feedback to facilitate improvement.

OTHER COMMUNICATION STRATEGIES

Communication involves not only the concrete skills used in verbal, written, and nonverbal interaction but also includes strategies in establishing and maintaining rapport, creating credibility, and providing feedback (Idol, Paolucci-Whitcomb, & Nevein, 1986; Speece & Mandell, 1980). These strategies, coupled with the skills discussed earlier, build an environment in which effective collaborative communication can take place.

Establishing Rapport

An initial phone call or meeting with the classroom teacher may set the stage for the itinerant teacher's working relationship in the classroom. Even very skilled consultants may lose their effectiveness with team members if a positive rapport is not established. Building a positive working relationship is an ongoing process for successful collaboration. Oftentimes at the itinerant teacher's first phone call or visit, the classroom teacher may appear overwhelmed. Common responses may be: "I've never had a student with a visual impairment before;" "I don't know what you could do for Julie;" or "How often will you be coming to

It is essential to observe how the child interacts with materials within the instructional context.

work with Julie?" Suggestions for initiating and building a positive working relationship include:

1. Phone call in advance: A surprise visit to the classroom may be unwelcome and threatening. Therefore, a courtesy phone call to introduce yourself and set up a mutual meeting time is appropriate.

2. Introduction: When introducing yourself, give your job title and a brief description of your role. For example: "My role as an itinerant teacher in the area of visual impairments will be to help facilitate Julie's success in your classroom as it relates to her visual impairment and learning needs. This may include working directly with Julie and assisting you with implementing her program."

3. Questions to establish the purpose of the meeting: By using open questioning the itinerant teacher can determine what kind of meeting is needed with the classroom teacher.

Many early childhood special education teachers have varying levels of knowledge and skill in working with children with visual impairments. Therefore it is important to establish what their needs are as primary service providers. The itinerant teacher may ask, "What things would be helpful for me to bring or discuss with you at this meeting?" If the classroom teacher does not know what questions to ask, you may say the following:

- "Some teachers have found it helpful at the first meeting to discuss the child's learning needs and concerns observed in the classroom."

- "We will discuss how and when I can observe Julie in your classroom. I will observe how Julie interacts in your classroom, taking into consideration her visual abilities and environmental factors, such as lighting, seating, glare, noise, and physical set-up of the classroom."

- "It may also be appropriate to discuss the best way for me to be a positive contributing member of the team process."

It is important that the itinerant teacher let classroom teachers know that the purpose of an observation is not to critique their teaching ability, but to determine how the child's visual impairment affects how she interacts and learns in the classroom.

Scheduling

Whenever possible, the meeting time should be based on the classroom teacher's schedule. One way to achieve this and still work within the boundaries of the itinerant teacher's schedule is to ask for several meeting options. If the classroom teacher has cleared her schedule, it is important to be able to meet at this time. The meeting will be more focused and will begin to build a positive working relationship between the two professionals. To maintain ongoing collaboration, regularly scheduled contacts are needed. One strategy is to schedule the next visit before the conclusion of the current visit.

Maintaining Rapport

Collaboration is defined as a method which includes shared responsibility and interventions that are mutually developed (Heron & Harris, 1987). Once rapport is established, the best way to maintain a positive rapport is through respect. Working together in a supportive and purposeful relationship can only be achieved through respect for the team process and respect for individual team members. Showing respect involves listening, valuing opinions, responding appropriately to team members (whether you agree or disagree) by contributing in a positive manner. Rapport is strengthened when the itinerant teacher is perceived by team members to be a reliable person who follows through on shared responsibilities, meets time commitments, and provides promised information and materials.

Credibility

Credible consultants are perceived to be competent professionals by their colleagues. Further credibility is established when the itinerant teacher has an understanding of the dynamics often seen in classroom settings (Heron & Harris, 1987). Classroom teachers may ask questions such as:

- "What can I do for Julie?"
- "How can I present an activity to the class when Julie can't see?"
- "Julie has so many needs, how can she participate in classroom activities?"

Itinerant teachers are credible when they are able to respond appropriately to the question or provide information that will help address the teacher's concern. They must be able to translate ophthalmological information into language that is easily understood; they should be knowledgeable about current research related to the child's visual diagnosis; and they should be able to explain educational implications in an understandable way. Itinerant teachers need to stay current with research and trends in the field of vision impairment. Their credibility is enhanced when they network with other professionals. In some circumstances, past expertise (parenting skills, previous work experience, and classroom experience) adds to the consulting teacher's repertoire of knowledge.

Providing Feedback

There may be times when a classroom teacher simply wants the teacher certified in the area of visual impairments to make program decisions regarding the student's vision needs. However,

Collaboration is defined as a method which includes shared responsibility and interventions that are mutually developed.

without the classroom teacher's input, feedback or recommendations from the itinerant teacher may not be best suited to the child's overall needs. Providing feedback from observations or assessments is most effective when background information is gathered from all team members. It is especially important to determine if behavior observed on the day of the assessment or observation is typical behavior. Discussion of written reports at team meetings allows for brainstorming about the information being reviewed. It is also important that the team finds the time to review what is working and what is not working. Team members also need to update each other regularly. This may include providing new information on developmental activities, strategies, toys, informational handouts, and resources. Strategies to facilitate team collaboration include:

1. Finding a time to meet when all team members can attend;
2. Locating a space to meet that is conducive to discussing program issues and confidential matters;
3. Keeping the length of meeting time as scheduled;
4. Providing concise written and verbal reports to eliminate unnecessary explanations; and
5. Providing informational handouts as a quick and easy reference.

There may be times when the itinerant teacher is uncomfortable providing feedback. This can occur when an interaction in the classroom is incongruent with his own particular style of interaction with children. Imagine the following scenario: the itinerant teacher is in the classroom doing an observation of Julie to evaluate her visual interactions. Julie's teacher claps her hands loudly close to Julie's face and yells, "I said to look." Certainly one choice is to ignore the teacher's inappropriate interaction and hope "modeling" more appropriate interactions will be effective. The itinerant teacher may address the situation using neutral or descriptive language. For example: "I noticed

The itinerant teacher should examine specific areas related to a child's visual performance and provide clear, specific, and instant feedback to the classroom teacher.

that when Julie heard the hand-clapping and the request to look, she flinched, closed her eyes tightly, pulled away, and stopped her activity for three minutes. She needed additional prompts to continue." By addressing the negative interaction in a nonjudgmental way, it allows for discussion of positive interactions and appropriate cueing techniques.

The itinerant teacher should examine specific areas related to a child's visual performance and provide clear, specific, and instant feedback to the classroom teacher. Figure 1 provides a form for recording observations and providing suggestions.

In summary, a team is comprised of professionals with varying degrees of skill level and ability. Using effective interpersonal communication techniques, a skilled itinerant teacher brings to the team process a refined ability to share knowledge, expertise, and resources.

The Consultant's Role

To consult and collaborate effectively with team members, the following "Do" areas, as previously discussed, are most important to incorporate into the consulting teacher's repertoire of skills. Equally important, the negative impact of the "Don't" areas should be understood and should be avoided.

Figure 1

VISION SUPPORT SERVICES OBSERVATION FORM
EARLY CHILDHOOD

Child Mario **Date** September 12, 1994 **Other Notes** To be discussed with teacher:
- Visual and auditory stimulation
- Positioning of objects and toys
- Glare in classroom

Time 9:30 A.M. **Observer** Robin Exsted

Building Learning Center **Teacher** Mrs. Adams

Directions: Use the following key followed by a brief description. **A** = Adequate **M** = Modify **N** = Need or **Yes/No**

Environmental Factors

- [A] LIGHTING: Overhead fluorescent/large east windows
- [M] VISUAL STIMULATION: Extensive Clutter
- [M] AUDITORY STIMULATION: Many competing noises (talking, music)
- [A] CONTRAST: Bright colors
- [M] ACTIVITY: Free play, snack
- [M] LEVEL OF ACTIVITY IN ROOM: When possible, decrease

Movement within Classroom Environment

- [Yes] AMBULATES FREELY WITHIN ENVIRONMENT
  - [ ] WALKING [✓] CRAWLING
- [Yes] ASSISTED MOBILITY ADAPTED EQUIPMENT
  - [ ] WHEELCHAIR [✓] WALKER [✓] PERSON ASSISTED
- [N] POSITIONING
  - [Yes] INDEPENDENT HEAD CONTROL:
  - [Yes] CAN INDEPENDENTLY ATTAIN POSITION:
  - [No] SENSE OF POSITION IN SPACE: No movement within play area

Looking Behaviors

- [M] QUALITY OF FIXATION RESPONSES: Mario views large objects, however inconsistent eye contact with peers and staff. Brief fixation (1–2 seconds). (Amount, duration, consistency)
- [M] DISTANCE, COLOR, SIZE OF OBJECTS: In order to access objects, needs to be within two feet.
- [Yes] HOLDING THINGS CLOSE: During free play, move small 2–3" toys within 5" from his face.
- [No] FAVORING ONE EYE:
- [Yes] ECCENTRIC VIEWING: Left head tilt.
- [No] EYE RUBBING/EYES RED:
- [No] LIGHT SENSITIVITY: Not observed on this day.

Interaction with Objects and People

- [N] VISUAL: During 15 minute sampling, Mario engaged in brief fixation with people on two occasions.
- [A] TACTILE: Mario's visual fixation responses to toys were best when he held the toy vs. the toy being placed close to him.
- [A] AUDITORY: Enjoys all music, appears to listen when people are talking to him.

Manipulation of Objects

- [Yes] SIMPLE INTERACTIONS/MOUTHING, HITTING OBJECTS TOGETHER OR ON SURFACE, ETC: Banged a maraca on the floor.
- [No] COMPLEX INTERACTION/STUDIES VISUALLY, TACTUALLY, AND DEMONSTRATES UNDERSTANDING OF SIMPLE USES FOR TOY OR OBJECT (PUSH CAR, ROLLS BALL, ETC):

Sound Localization Skills

- [Yes] "QUIETING" BEHAVIOR TO SOUND: When the teacher turned on a music box, Mario "quieted" to the sound for about 30 seconds.
- [Yes] TURNS TOWARD SOUND SOURCE TO SIDE, FRONT, BEHIND: When a sound-producing toy was presented to Mario's right side, he turned towards it.
- [Yes/No] TURNS & LOOKS AT SOUND SOURCE TO SIDE, FRONT, BEHIND: Mario only reacted to the toy when presented in front of him.

Communication

- [A] CHILD—VERBAL: Verbal turn-taking was observed. Mario made sounds to indicate pleasure during play with musical busy box.
  CHILD—AUGMENTATIVE EQUIPMENT: When cued by the teacher, Mario pointed to 5" black and white "Eat" picture from a distance of 8–10".
- [A] TEACHER/STAFF—VERBAL:
  TEACHER/STAFF—SIGNING:
  TEACHER/STAFF—VERBAL & TACTILE CUEING: Great job of using verbal and tactile cues during snack time.

Do...

1. Do communicate effectively using interactive listening and responding in an appropriate manner.
2. Do establish credibility with your team members by continuing to research and provide current information regarding the child's medical and educational implications due to loss of vision.
3. Do respect all team members by listening, valuing their opinions, responding appropriately whether you agree or disagree, and contributing in a positive manner as a team player.
4. Do establish yourself as reliable by keeping scheduled appointments, maintaining accurate record keeping, and providing promised information and materials.

Don't...

1. Don't take over the classroom teacher's role. The itinerant teacher is not the primary service provider for the child. He assists team members in facilitating, adapting, or modifying existing educational materials or opportunities for the child with visual impairments and multiple disabilities.
2. Don't prejudge the classroom teacher. If the initial contact is not positive for either the consulting teacher or the classroom teacher, both may have a tendency to prejudge the other. This may lead to the classroom teacher being overwhelmed with the task of providing a program to meet the needs of the child. The classroom teacher may need more information about the implications of the vision loss, more time to talk with the itinerant teacher to plan strategies, and continued opportunities to establish rapport and respect.
3. Don't overwhelm team members with volumes of medical literature, handouts, or strategies they should try with the student. It is more effective to distribute information at various intervals when the timing is appropriate and the team is ready to digest the information.
4. Don't provide interpretation of educational implications with insufficient information. If the itinerant teacher is unclear about the visual diagnosis and what it could mean educationally, it is imperative to consult with medical professionals or other professionals in the field of vision.

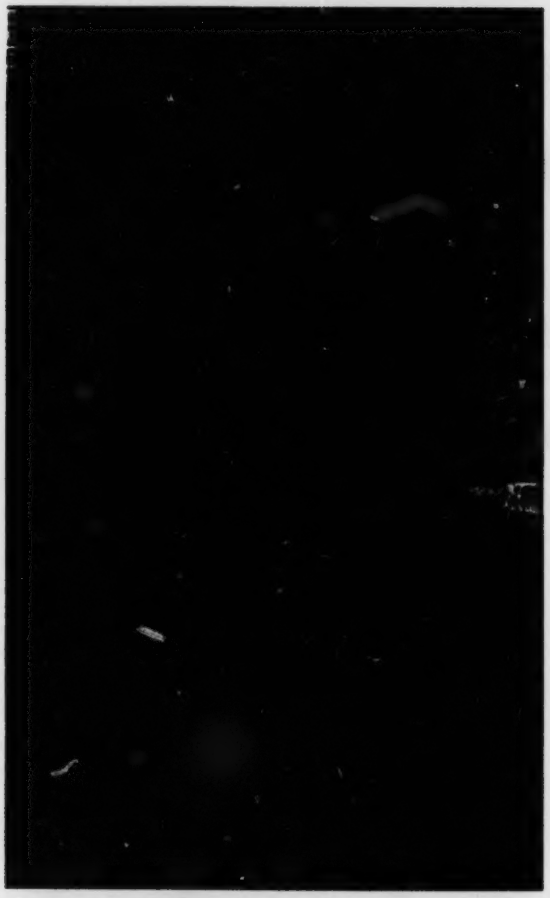
TEAMING STRATEGIES

Research indicates that consultative interactions are more likely to be successful if they are facilitative and supportive rather than prescriptive and directive (Heron & Harris, 1987). If members of the educational team use collaborative techniques for sharing information regarding their area of expertise, then all team members will have a common goal, share in the decision process, and feel like contributing members.

At a child's educational planning conference, all team members need to collaborate in determining services to meet the needs of the child. This approach works well to avoid duplication of service. For example, after the itinerant teacher and a physical therapist have modeled optimal positioning and appropriate visual tasks, these interventions can be carried out by other team members many times during the child's daily routine of activities. Interventions can be monitored and recorded by all team members to ensure consistency.

The following list identifies aspects of a child's responses which can be used to measure the effectiveness of interventions:

- Response to stimulus (visual, auditory, tactual)
- Response to verbal or tactual cues
- Reaction time to stimulus
- Duration of response
- Indication to continue (verbal or nonverbal)
- Optimal position for consistent responses



The itinerant teacher can suggest how to use materials to enhance vision-related behaviors and to facilitate learning.

- Anticipation of stimulus
- Number of responses to stimulus

Using a collaborative approach may require additional meeting time for team members in order to provide consistency for the child. The extra effort, however, becomes valued when compared to a segmented service delivery model. To implement and maintain appropriate programming for the child with visual impairments and multiple disabilities, the following tools can be helpful:

Team meetings These can be a powerful mechanism for sharing and updating information about the child. They also involve team members in sharing information, resources, and strategies to meet the needs of the child. When transitioning a child to another program, this format can be very effective in providing information about the child to the new team members.

Videotaping This tool can provide immediate feedback to clarify or confirm observed child behaviors. A videotape can provide an ongoing pictorial history of the child's strengths and needs. For learning purposes, it can also be helpful in assessing the dynamics of the team process or reviewing the effectiveness of classroom activities.

Collaborative teaching Collaborative teaching increases the effectiveness of services provided to the child. It helps the team to focus on the total needs of the child and to integrate intervention objectives. It provides opportunities to model appropriate interventions and to observe and adjust feedback regarding the child's interactions.

Mentoring Observing colleagues who are skilled in their profession can provide a valued resource for consultation and collaboration strategies. It is important to recognize their ability to establish rapport with team members, listen and respond appropriately to questions asked, and participate in team decisions. Practicing different strategies and requesting feedback provide the itinerant teacher with opportunities to refine and enhance his skills.

Networking Due to the extensive and complex responsibilities of the itinerant teacher, there is a need to have a system to strengthen and update one's expertise. A networking system provides the opportunity to meet, discuss, and share experiences and knowledge with other professionals in the field of visual impairment. Teachers certified in the area of visual impairments should take advantage of any existing networking systems within their states, such as school district staff meetings, regional meetings, and state or national conferences.

The itinerant teacher helps identify how and where materials should be presented in order for a child to be able to see them.

EDUCATIONAL INTERVENTIONS

Effective communication skills and strategies are the framework for providing a team approach. With this foundation, the itinerant teacher certified in the area of visual impairments, along with other team members, is able to provide the necessary instructional techniques to meet the needs of the child. The following list provides a basis for the itinerant teacher to offer specific information and instructional strategies:

1. Explain the child's visual impairment, how it affects the way he sees, and behaviors which may indicate that he is having difficulty seeing what is presented.
2. Describe how close the child should be to certain activities and the working distance necessary.
3. Describe preferred colors or size for toys and materials.
4. Identify how and where toys, objects, and materials should be presented in order for the child to be able to see them.
5. Describe lighting requirements and optical and nonoptical aids the child needs.
6. Identify the level of assistance the child will need to participate in selected activities.
7. Describe how selected activities can be modified for the child who is blind.
8. Provide suggestions for the physical arrangement of the classroom.

Instructional Strategies

The following examples provide specific instructional strategies to meet the vision-related learning needs of children whose multiple disabilities include visual impairment. These strategies need to be developed with other team members in order to provide a comprehensive approach to the child's learning needs.

Marie

Marie has diagnoses of retinopathy of prematurity, high myopia, and significant developmental delays. Marie is four and attends a half-day early childhood inclusion program with age-appropriate and special needs peers. As determined by the comprehensive assessment, Marie demonstrated a need to be given opportunities to respond to appropriate visual stimuli. However, this could not occur unless Marie was provided with minimal head support to maintain a midline head position. Recommendations which could be modeled for the team members include:

- Use a functional and integrative approach with Marie to incorporate stimulation of vision into Marie's daily routine of activities rather than in isolation.
- Provide head support to increase visual responses.
- Use auditory or tactual cues to increase head control.
- Choose toys with bright colors, lights, and sounds in order to encourage Marie to look.

- Place Marie within three feet of group activities; allow additional time for her to visually interact and respond.
- To elicit mutual gaze with Marie, team members may wear brightly colored or high contrast head bands, visors, or hats to frame the face.
- Use movement to attract Marie's attention: brightly-colored balls or objects floating in water.

Jon

Jon has a diagnosis of cortical visual impairment due to encephalitis at age three weeks. Jon is three years old and attends a half-day program in an Early Childhood Special Education classroom. As determined by parent interview, classroom observation, and the assessment process, Jon has many of the behavioral characteristics common to children with cortical visual impairment. Strategies to increase Jon's development of visual attending skills may include using familiar objects and people to increase Jon's visual attention. Change one characteristic of a familiar object only after Jon is able to recognize it consistently (e.g., change a red cup to a blue cup). When introducing unfamiliar objects to Jon, use repetition and auditory and tactual cueing. Use tactual and verbal cueing to gain and direct Jon's visual attention. Too much stimulation (auditory, visual, tactual) in the environment can have an adverse effect on Jon. Modify the environment to control the amount and degree of stimulation when possible. Physically set up the classroom to provide several small group or individual areas. Clutter may impede Jon's ability to process visual information. Present objects in isolation, spacing objects apart. The physical environment should not be filled with a lot of visual clutter.

Jon responds best to objects that move in his peripheral field. When trying to elicit visual interaction, move an object from side to midline. Jon has been observed staring at lights. This behavior limits learning opportunities and should be redirected. Reposition Jon to avoid light gazing. Position an object or yourself within area of light and use movement to redirect Jon's gaze. Jon demonstrates variability in visual attending behaviors. It may be inappropriate to have stable expectations for visual attentiveness.

Ben

Ben has a diagnosis of optic nerve hypoplasia. He also has many of the associated anomalies (growth hormone deficiency, severe developmental delays, feeding delays). Ben has no vision in addition to a severe hearing loss. He is five years old and attends a half-day regular kindergarten program with support from a special education team. A teaching assistant is in the classroom to physically assist and adapt materials for Ben. He has difficulty transitioning from one activity to another and anticipating what comes next. Observations and assessments indicate that Ben responds to tactual input. Clearly, Ben needs a communication system. Tactual cueing is one method to signal transitions and to elicit an anticipatory response from Ben. Another strategy is to physically assist Ben through motor responses when each of the following are used to communicate transition to an activity:

- Adjust and fade physical assistance based on Ben's degree of interaction;
- Use a small Velcro strip as an object cue to communicate being taken in or out of wheelchair (give Velcro strips to Ben and assist in separating them);
- Use a spoon to communicate meal time (give spoon to Ben and assist hand-to-mouth motion);
- Use a wet wipe to communicate toileting (give wet wipe to Ben prior to toileting);
- Use a ball to communicate play time (give Ben a ball and assist in squeezing ball); or
- Use a coat or sweater to communicate going home (give Ben his sweater and assist in placing it on his arm).

OTHER CONSIDERATIONS

Oftentimes classroom teachers are excited about adding specialized sensory materials to their classroom. The itinerant teacher can recommend those materials and provide suggestions on how to use them effectively with a specific child to elicit, enable, or enhance vision-related behaviors and to facilitate learning. Equipment and materials can include: illuminated play boards, tactile boards, adapted computer software, commercial sensory toys, adapted books, toys to encourage motor movement, cause-and-effect toys with visual, auditory, and tactile consequences, and adaptations to the existing classroom environment. However, it is important to note that the itinerant teacher should not supply a "magic bag of tricks." The child's natural environment, when modified or adapted, is a rich source of learning opportunities. It is important to encourage the classroom teacher to share her expertise while brainstorming ideas and to provide materials that will enhance the child's learning opportunities and social interactions.

In conclusion, the consultant role of the teacher certified in the area visual impairments is a specialized yet diverse one. This specialized teacher provides specific strategies to promote a visually impaired child's interactions with the environment and access to information. As a consultant to classroom teachers, the itinerant teacher is, most of all, a team member.

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Chapter 10

Barbara Quinian

A FAMILY'S PERSPECTIVE

Recently I have become familiar with a country and western song that is meaningful to me. It says that heroes come in every shape and size. This chapter is intended to be a tribute to Daniel. As he is quite the country music fan, I find it only fitting to refer to this song. In the following pages I would like to share a little about our family and the strategies we have found successful in raising a child with multiple disabilities. The story is intended to be bittersweet, as a reflection of our lives as parents of a child who is medically and physically fragile and blind. Who is Daniel? He is my little hero.

THE EARLY YEARS

My husband Don and I are both the youngest children of middle-class American families. We are thirty-something, with two children: Daniel, seven, and Jesse, four. Our adventure began in October 1986. After a normal pregnancy and birth, Daniel was diagnosed with a rare congenital metabolic bone disorder known as *osteopetrosis*. We were told that he would have brittle, easily-fractured bones, be blind, and probably deaf by the age of three, among other disabilities. In addition, he would have serious medical issues most of his life. He was one of the first children to be diagnosed with osteopetrosis in Missouri. Osteopetrosis is a disorder wherein the components of bone breakdown and restructure are reduced, leading to an imbalance in bone formation and removal, resulting in increased bone accumulation or density. This disorder was identified by Albers-Schonberg and given the name *osteo* (bone), *petrosis* (rock) and referred to as "marble" or "rock bone." The major difficulties include cranial nerve compression, particularly optic and auditory. Dan is totally blind because of optic nerve atrophy, caused by increased bone density in the optic foramen and compression of the optic nerve. Because the disorder is congenital, there is a chance that any future children we might have would be at risk.

In the early years, we worked with the doctors in Philadelphia who had learned about Dan's disorder and made several trips there. We watched Dan gradually become less irritable and more interested in the world around him. His cognitive development was pretty much on target: he seemed to comprehend things well and repeated single words as early as six months, but he had significant fine and gross motor delays. In retrospect, his inability to crawl and maneuver his limbs probably resulted from multiple fractures and the extra weight of bone accumulation in his skull. In any case, we were moving forward—if only at a snail's pace. Dan had become strong enough to sit, roll and even stand; only in the last few years has he really been able to crawl. His development was then, and continues to be, fragmented and inconsistent. But, all was well, and we decided to have another baby. A newly found confidence and hope had made its way into our lives for a while.

During my sixth month of pregnancy (September 1989) surgery was recommended to decompress Dan's facial and auditory nerves. He was experiencing right side facial palsy, and his hearing was believed to be in jeopardy. While there was no reliable way to monitor his hearing—and knowing he was already blind—we felt we had no choice but to allow the surgery. As it turns out, Dan's skull had become very thick, narrowing his cranial space and encroaching on everything inside. Mid-way through the surgery, part of his left temporal lobe herniated outside of his skull. Surgery was abruptly ended and several life-threatening

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situations erupted in the weeks to follow. Dan was left with a fluid-filled "bump" on the left side of his head, as well as the loss of every capability he had gained up to that point.

I cannot describe how our spirits suffered over this—and continue to suffer. Once again, we were facing the complete unknown.

While the events surrounding this surgery would fill a chapter, the most important thing to focus on is Dan's recovery. Around Christmas, Dan was able to begin sitting with support, was toilet trained (again), and was uttering a few words. From there, he has gradually regained most of his skills, though we were not sure if he would suffer any learning disabilities. His right side suffered some paralysis, and language development was delayed, making cognitive assessment difficult. We view the difficulties introduced by this surgery as tougher for Dan to overcome than his diagnosis. However tragic, this episode gave us a new handle on Dan's illness: We no longer rely solely on recommendations from any one professional, but base our decisions on information gathered from them—we listen to our hearts, and come to reasonable conclusions for Dan. This strategy continues to be Dan's best medicine.

On December 29, 1989, Dan's wish for a little sister was granted. Having been told earlier that a bone marrow transplant was one of the few long-term options Dan might have, we saved the umbilical and placenta blood cells from Jesse's birth. It was tested as being just shy of a perfect match. At this point, Dan's hematologist informed us that we needed to eliminate all possibilities before subjecting him to a transplant, especially without a perfect match. An associate of the doctor in North Carolina had drawn up a plan for the drug Interferon to be researched on children with osteopetrosis. We were slowly running out of long-term options for Dan, so we decided to try the drug.

In September 1990, we traveled for three weeks to North Carolina to start Dan on Interferon. Within six months, considerable changes started taking place in Dan's bone composition and reabsorption as well as significant increase in bone marrow space. Once again, a small ray of sunshine peeked from behind his little gray cloud. We were making some real progress. In June 1991, with the transplant on hold, and having dealt with more unkindness than we thought possible toward Dan's appearance, we scheduled surgery to remove the "bump" and an acrylic plate was placed on the left side of his head. Surgery was successful and another chapter was behind us. With Dan's medical needs somewhat squared away, we were able to concentrate on his education.

OFF TO SCHOOL

As you might guess, his educational needs and abilities, at this point, were difficult to assess. During the first three years of Dan's life, we were affiliated with a private agency serving infants and toddlers with visual impairments and their families. Thanks to the steady

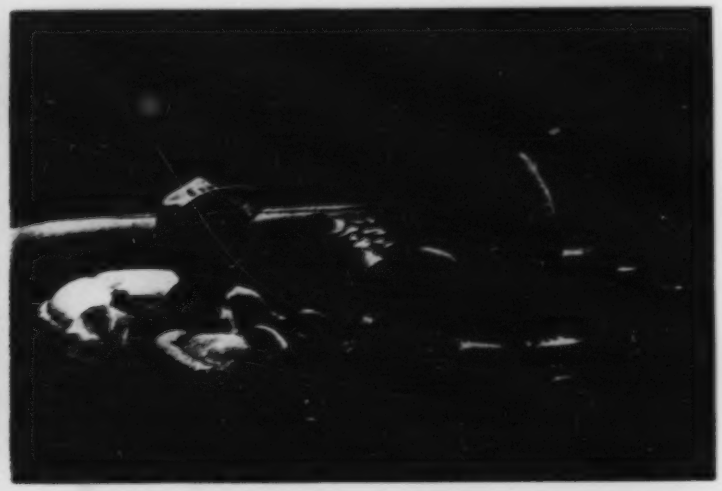
guidance, emotional and instructional nurturing, and—most of all—the patience of these folks, we were provided with most of the tools needed to set the stage for Dan's education. Whenever possible, we surrounded ourselves and Dan with only positive and open-minded individuals.

When Dan approached preschool age, it was my wish to have him included with normally developing peers. However, our public school district felt he required too many special services, and recommended a special education program. Dan was placed in a building with a population of children with disabilities and staff unfamiliar with the needs of blind or visually impaired students. It was a rude awakening from the wonderful security of knowledgeable people we had first encountered. At this time we learned the importance of prioritizing Dan's needs: to insure his safety, first and foremost; and then to make sure that he would be intellectually challenged. This order would provide the best possible opportunity for Dan to reveal his strengths and weaknesses to his educators and therapists. Once they became more familiar with him, we could set specific goals and design a curriculum in which Dan could be successful.

We learned very quickly that the rest of the world's first impression of Dan was very different from the child we know so well. I often wonder if he sensed this about others, as he would invariably fail to "perform" for anyone outside of his sphere of preference. How would I make all of these strangers understand what he had been through? Would they be careful with him? Would they get to know him and realize his potential, or chalk him up as needing much more attention than they could give; his speech too difficult to understand; and his requiring too much physical help to ever be independent? We have learned to set aside these feelings of insecurity for the most part, and concentrate on what is in the best interest of our children, and our family as a whole. This has been a very difficult evolution, as people with disabilities are very often met with confusion and ignorance, even by those who mean well. An incredible weight was lifted from us when we realized that the best we can do is to provide Dan and his sister with a stable, secure family life and home, and let them know they are loved and accepted as they are.

At the risk of being overbearing, I observed Dan in class often, gathered information about educating visually impaired preschoolers, and got to know his teacher very well. Eventually, I invited her to our home for a visit—to see the "real" Dan. We had kept excellent records of Dan's milestones and progress early on, and passed this information on to whoever would come into contact with him. The educators appreciated this, as we know more about Dan's disorder than anyone else. Observing Dan in his environment, where he is in so much more control, continues to be one of our best familiarization techniques. This can also be done by cassette recording or videotape. When a child is unwilling or unable to show what he knows, or performs differently in various settings, the educator simply must be made aware of his very best. The best educators we have encountered have always welcomed our input and allowed us to play a major role in the development and application of Dan's education. We have also found that this method cuts down on frustration for everyone involved—especially Dan. Another tool I have commonly used is a calendar with room for notes, or a journal. This works well if messages are kept brief and to the point. It also serves as a well-documented reference when IEP time rolls around, provided the information has been kept up-to-date by both parties.

The best tool in keeping abreast of Dan's problems and progress is a monthly meeting with all the staff assigned to him. These meetings can be very productive when approached from the standpoint of establishing clear-cut goals, identifying successes and failures, and finally, follow-up reinforcement at home. In this way, we are offering the educators a chance to see their efforts take root, and for them to know that their expertise has been applied to every aspect of Dan's life. Follow-up reinforcement is especially important for



We realized that water sports may be one of the few sports that Dan may be able to enjoy. We are now able to let him play independently with other children in the shallow water.

From the start, Dan has loved riding in the family boat wearing his life vest. We have even let him "drive" the boat.

visually impaired children, as consistency is so critical in helping them obtain pieces of information and finally grasping the complete meaning of a concept.

OUR PRIORITIES AND CONCERNS

In spite of Dan's disabilities, we have found it especially helpful to have the same expectations and limitations for him as we have for his younger sister, Jesse. The only difference is that we sometimes have to adapt, modify, or manipulate the environment for him to be successful. Several examples are given in the section on "Making it all work at home" and many others involve family activities.

Water Sports

Don and I have always enjoyed boating and trips to the lake in the summer. Naturally, we hoped our children would enjoy this as well. We also realized that water sports may be one of the few sports that Dan may be able to enjoy. First, we were lucky that Dan always enjoyed bathtime. Then we found that he liked going into the pool or lake, as long as we held him in the water. He preferred rough-and-tumble play with us in the water rather than just sitting in shallow water to play. When riding in the car he liked going on circular exit ramps on the highway and we called this leaning, circular ride "The big circle." So we use the concept of "The big circle" to zoom him around in his little boat raft. From the start he also loved riding in the family boat wearing the life vest. We also let him "drive" the boat to make "The big circle." The next step was to get a larger backyard pool. We found an inflatable one that measured about 6 by 12 feet, and 27 inches high. In the pool, Dan can walk around in the water wearing a swim ring. We are now able to let him play independently with other children in the shallow water. When we found that he was pulling his feet up, kicking around, and floating in the ring, we decided it was time for swimming lessons. He is now able to put his face under water and do some strokes while being held and/or using a kickboard. In the summer of 1994 he graduated to riding in an inner-tube behind the boat with Dad. The inner tube has a jacket around it with handles, so he cannot fall through. The ride is wild and bouncy, so Don and I are wiped out after a few hours of this!

Birthdays

Up to about age five, Dan would become upset when unwrapping gifts at a big party. We could never figure out whether it was the crowd, the noise, unwrapping the gift, or if he didn't feel well for some reason. After years of struggle over this, we decided that for his birthday, we

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should change things so that he could enjoy himself. First, he got to choose the food, even if it meant we all had to eat Raisinettes and Moo Town Snackers. Next, we told everyone that Dan would open his gifts at the party only if he wanted to do so. Dan's last two birthdays have been the best. We still let him choose the menu and his selections have gotten more sophisticated. He has a rib-eye steak while the rest of us eat hamburgers. We have stopped wrapping his gifts for birthdays and Christmas although the rest of the family continues to do so. He really prefers picking up and feeling his gift rather than feeling paper. This year at his birthday party, one of Dan's teachers helped him unwrap the gift she had given him. So if the gift is wrapped, we've begun asking the giver to help him unwrap the gift instead of depending on us.

Christmas Lights

Our neighborhood is very big on decorating houses with Christmas lights, so we enjoy spending a few evenings driving around and looking at them. Dan has never tolerated this family activity well until about four years ago. A family down the street had Christmas music playing so that we heard it as we drove by. Based on Dan's reactions we realized that he needed the music to understand what the festivities were about. From that time we have taken Dan's favorite Christmas tapes to play during the ride so that the outing can be meaningful to him.

Physical Activities

Dan took gymnastics for a while. The trampoline and balance beam were his favorites. We worked on somersaulting and Dan could get about three-quarters of the way over. Then I grabbed his hips and lifted some of the weight of his head and neck, and flipped him over the rest of the way. We also taught Dan how to jump because he would fracture his legs if he jumped like the rest of us. We broke down the movements in this way:

1. "Bend your knees and then push as hard as you can with your feet."
2. When he did that, we picked him up to simulate going up.
3. "When your feet touch the ground, bend your knees again as soon as you feel the floor."
4. "Right away, push off again..."

Sometimes things are physically impossible for Dan. For example, on field sports day at school we adapt the activity, either by cutting his turn short, or by giving him a head-start, or just more time to complete the task. In the long run, he ends up understanding the objective of the event instead of remembering bits and pieces of confusing movements that just leave him aggravated. I must also say that lately there are times when Dan has surprised us. He has become more daring and wants to do what other children are doing, and without help. We believe that "easing" him into activities has helped a lot. There was a time when new activities made him hysterical and irritable. We have learned that by repeating the experience in a consistent manner, and by incorporating his need for some control over the situation, Dan eventually became less defensive overall.

After lots of trial and error, we have developed a flexible mindset and enjoy creating new ways to help him succeed. Sometimes this requires much work and creativity; at other times, activities are successful simply by involving a favorite toy, person, or when followed by a favorite activity. The added bonus is that when he eventually did even the smallest task alone, he was willing and determined to do even more. This did not happen overnight, or without frustration, and involved constant support from his educators and family, both immediate and extended.

When Dan cannot understand a concept because of his blindness, we provide real-life experiences in small, well-described increments, using all of his available senses. For example, when we were building our house, Don and Dan made several trips to the nursery to select trees for our yard. They discussed the size, shape, benefits, and appearance of each. I

think Don even recruited Dan to help with planting by supporting the tree and holding tools. They checked the trees almost daily, felt the texture of the trunk, bark, and leaves. With the change in seasons, the trees changed in texture and appearance, and Dan began to identify the trees by touching them. He identified a Dogwood, White Birch, Redbud, Bradford Pear, and Sugar Maple!

The acquisition of Dan's skills has been a steady, progressive trend for most of his life. In dealing with Dan, and his array of disabilities, we sometimes forgot about or were uncomfortable doing "regular" things. The risk factor involved with rejection, or fear of failure, kept us from even trying at times. The harm in falling into this pattern is that it allows a false sense of security. Initially, Dan despised unfamiliar people and experiences. Then we realized that offering new experiences aroused his curiosity. He became interested and willing to try new things. It has become something of a personal mission of mine to show everyone Dan's abilities rather than disabilities. I have tried to keep him exposed to the same things his peers enjoy, in order that he will have something in common with them. We try to get together with friends as often as possible, and try to involve them in activities that Dan enjoys.

DRESSED FOR SUCCESS

I make a special effort to dress Dan like the other kids, always making sure his physical appearance is tidy. This helps others approach him. I also try to choose clothes of his preference that are designed to suit his needs, mainly loose-fitting cotton garments, elastic-waist pants, and shirts with large neckholes.

Dan can remove all his clothes, including socks and shoes, but needs help putting them on. He can pull on shirts, underwear, and pants. He can unsnap but needs helps with jeans, buttons, snaps, and ties. We have come to a crossroads with these skills because they are very frustrating for him. For now, they are on the back burner, to give Dan a break and for us to come up with some new and innovative ways to build these skills.

Dan wears sweats to school on physical education days. When he is "dressed for success," he is more independent and less frustrated with bothersome tasks that interrupt his day—like going to the bathroom. A small key chain, or plastic hook from the dollar store attached to his coat zipper for better grasp, is another example. We try to keep adaptations inexpensive and simple, yet flexible, as his needs are constantly changing. For example, winter coats are a particular problem. By the time we would get him in a turtle neck, sweater, mittens, and then a bulky winter coat, Dan could hardly move. Most children who can move around a lot keep themselves warm, but we always fear the bus having trouble when it's cold. We have solved this problem by buying him a coat with a hood, which cuts down on bothering with a hat. This is less bulky, so a warm sweater can be put on first, and then the coat, without binding and gagging. A generous layer of hand cream applied to hands and face, a scarf around the mouth and nose, mittens, and Dan is "winterized."

DAILY ROUTINES

Dan has always relied on a routine to keep his day in order. When he is fully aware of the day's events he is calmer, knows what to expect, and what is expected of him. The only drawback is not allowing for interruptions or changes to this schedule. This is difficult for him and claustrophobic for the whole family. We deal with this by incorporating short, pleasant interruptions into his routine, and asking for his permission to deviate. Over time, he has become more accustomed to sudden changes and enjoys being in control of them. We also try to end an activity on a positive note. This "control" is a key factor in motivating Dan and easing him on his way to independence.

FIRST AND SECOND GRADE

At the age of six, we enrolled Dan into the first inclusive education class in our school district. Along with including Dan in the regular classroom, we wanted him to be able to go to school with Jesse and other kids in the neighborhood. The first year of school was spent getting acquainted with a new staff of

educators and therapists and a few parents who were apprehensive about inclusive education. There were many bugs to be worked out. The hard work and dedication of this new staff, particularly Dan's special education, vision, and speech and language teachers has introduced us to the student we have always hoped Dan could be. Although he requires 100 percent supervision for safety and almost as much in instruction, they have succeeded in developing his independence to a new level and he is displaying a lot of initiative.

Dan is now eight years old, and included in the regular second grade class for most of his day. There are 24 children in the class and two of them receive special education services. A special education teacher works with Dan's second grade teacher to adapt instruction for him. The special education teacher or one of her assistants works with Dan consistently. In addition, Dan receives services from the itinerant teacher certified in the area of visual impairments every day, orientation and mobility instruction and speech and language therapy three times a week, and occupational therapy, physical therapy, and adaptive physical education once a week.

For now, his goals and priorities are pretty much the same at home as they are for school. We are concentrating primarily on simple addition and subtraction, spelling, and pre-braille skills. Dan has an excellent memory. At age two, he could count to 100 and amazed everyone although we knew he did not understand any number concepts. Now he is able to add combinations of numbers up to ten. Subtraction is more confusing to him. We use a homemade abacus of beads on a coat hanger and push pins on a cork board. Dan's braille skills are developing slowly so we use more auditory and verbal means to do homework, schoolwork, and tests. Dan will probably be a left-handed braille reader, if he reads at all, because his right hand has a semi-paralysis from the 1989 surgery.

With his spelling we are using a phonics approach because of his excellent memory. We have broken words into sounds he must identify. This phonics approach also helps him to be aware of the sounds he does not pronounce well (b,p,f,m,w). We started with two-letter words, then added three-letter words, and are now up to four-letter words. Dan must identify the beginning, middle, and ending sounds and letters. He is doing pretty well although he still confuses tricky sounds like c & k and c & s when they sound the same. He can spell some words by rote. We use the same spelling words as his class, but fewer, and he is tested orally.

Most importantly, we are working on developing good language communication skills. This has always been a particularly tough area for Dan. He has the ability to pronounce most sounds—but with difficulty, due to an overgrowth of bone in his mouth and jaw. It is hard for him to pronounce labial sounds: b, f, m, p, w. He tends to skip those sounds altogether and pronounce the rest of the word as if they do not exist. He needs verbal prompts to include those sounds in his speech or else he cannot be understood. He has his own brand of "pig latin." For example, he says "a-ee" for baby, "eye-eye" for bye-bye, "non" for mom, "crowd" for proud, and "sunny" for funny.

Dan can understand everything that is said to him unless it is outside his realm of experience. Sometimes he has trouble processing how he will respond. For instance, he often confuses the pronouns "I," "you," and "me." He also tends to turn statements into questions. For example, when he is finished eating, he will announce "Are you finished?" or if he wants to do something he will ask, "Mom, he wants to ride his tricycle." A speech therapist suggested taking his hand and patting his chest when he spoke of "I" and then touching our arm or hand when he referred to "you" to help him understand the difference.

When introduced to Dan for the first time, his speech is quite a challenge to the listener. For the most part, he can get his point across to anyone who understands his speech. We also ask him to speak slowly and clearly. Dan now uses tense and pronouns properly about 75 percent of the time.

I recently employed two neighborhood girls as babysitters. They are very active socially and know everyone in the area. This has helped Dan get to know kids in the neighborhood since most of them go to a different school. Dan's school is closer and one-story, while the other school is further away and has two-story buildings. Most children who don't know Dan are afraid to approach him and don't know what to think.

Dan has made the most progress in the area of social development. He participates in Wolf Cubs of the Boy Scouts, is included in regular classes, is invited to birthdays which involve bowling, skating, and home parties. Recently, a little boy switched an overnight party to an afternoon party when he learned that Dan would not be able to sleep over because of his medical needs. This year has been a great one for friendships. The children have had two years with Dan in school, so many are now becoming his buddies.

I'll admit I'm a little nervous about the whole risk of the friendship thing— it actually happening—and I'm not sure how secure I am in dealing with it.

For the most part, it will be up to us to have these friends over and let them get to know Dan one-on-one. At school, some children tend to overwhelm him with hugs and want to help him or do everything for him. Dan becomes very annoyed and doesn't know how to express his annoyance so he begins to act silly or becomes irritable. We are encouraging Dan to say "Please don't do that," or "I can do it myself."

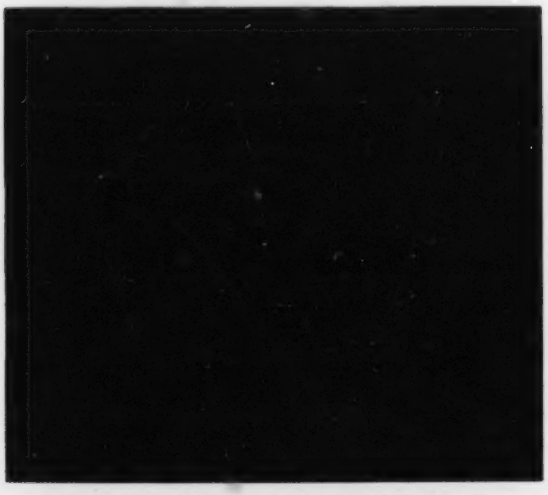
I am planning to explain his bone disorder to his class and his need to be independent. Although many of his peers cannot understand him they have accepted him and like seeing him succeed. When Dan begins to use better language skills in communication, his peers will be able to relate to him better. For now, we enjoy seeing him beam with pride in being a part of his class.

A strategy in reinforcing goals at home is to set up the environment to foster success.

GETTING AROUND

As I mentioned earlier, Dan's safety is our first priority. In the past, injuries such as a broken arm have caused major setbacks in his development. His physical characteristics have also held him back to some extent. At age eight, he is up to 38 pounds and 38 inches tall. He has had the same two front teeth all his life and lost his bottom teeth to a bone infection. This sometimes gives him problems with eating independently. Dan's head is somewhat larger than average. And, more importantly, it is heavier and tends to throw him off balance. The paralysis of his right side is still a problem, though he has learned ways to maneuver without full use of his right hand. As for his right leg and foot, a leg brace up to his knee has given him greater stability and confidence in learning to walk independently.

For the most part, he is able to walk using trailing techniques, a sighted guide, or one of two walkers. One walker is kept at school for him to use for walking or riding. Dan's dad made it for him from PVC pipe and wood, with large four-inch caster wheels for freedom of movement and stability. It is designed specifically to meet Dan's needs in the regular classroom. The walker can be pushed by another child or adult and has room for another child to ride in it. The seat cuts down on transportation time as Dan walks slower than the rest of the class. In the cafeteria he pushes the walker through the line and can put the



Dad designed a walker for Dan to meet his needs in the regular classroom.

lunch tray and supplies on the seat. Although he still needs assistance getting to and setting up at the table, the walker has provided a big step toward independence for him. We feel he is safer with the walker when he has to rely on himself. The other walker is a standard metal type with small caster wheels and a basket to carry things. It is lighter weight and portable for use at home and for outings. All of this and his medical issues had to be considered when deciding upon his placement in school.

MAKING IT ALL WORK AT HOME

I have been fortunate enough to be able to stay at home with my children while they are small. This has been a real asset in applying instructional goals in the work and school week. While most of the work week is based on survival, incorporating instructional goals and reinforcement of basic daily living techniques into this time frame is essential for Dan. As a rule, we try to refrain from "drilling" Dan with concepts. Instead, we select a few important ones that fit into ongoing activities and the family's routine. For instance, Dan is an avid music fan, so we might work on phonics while singing a favorite song. Or Dad offers a weightlifting session after the completion of his spelling and math homework. During the session, he will reinforce counting skills, spatial terms, and language-use with regard to weightlifting terminology.

The idea is to find an area of interest and incorporate a desired goal into an activity based upon this. For Dan, it is usually music, appliance and motor sounds, food, or something he finds tactually interesting, such as one of his favorite balls. Meal time is also a good time to reinforce not only eating skills but social skills (i.e., using a napkin); and talking and listening skills (i.e., proper language-use to ask for food; listening while others are talking)—even math skills can be brought to the dinner table. Dan is frequently required to count, add, or subtract his favorite dessert—Raisinettes—before eating them. Another example is using a 16-ounce pitcher with a flip-top lid for independent pouring and fine motor practice.

Another strategy in reinforcing goals at home is to set up the environment to foster success. For instance, in Dan's room we specifically chose plastic crates to store his toys instead of a toy box so he could find them and also put them away independently. His bed is metal with rods under the mattress instead of a box spring, so it is lower to the ground and easy for Dan to get in and out of. His dresser has small drawers to organize his clothes and is located next to his closet where the rest of his clothes are on a shelf or hung on a rod at shoulder level so that he can reach them easily. Dan's room is arranged so that his bed, dresser, toy and book shelf, and closet parallel his morning and evening routine.

One of Dan's major needs is taking responsibility for himself and following through on a task. I felt that if he became responsible for himself first he would then move forward in this area. To tackle this, I decided that Dan would learn to manage all of his personal hygiene independently in the hall bathroom across from his room. Taking care of one's body seemed to me the first step in realizing a self-concept and accepting responsibility. We chose to introduce tooth-brushing after meals, since Dan learns best through routine. He wasn't fond of the toothbrush at first, so we found an inexpensive battery-operated brush that buzzed and vibrated, and he could hold it better. A small tube (sample size) of toothpaste and flip-

Taking care of one's body seemed to me the first step in realizing a self-concept and accepting responsibility.

We chose to introduce tooth-brushing after meals, since Dan learns best through routine.

top cap are lifesavers in teaching tooth brushing. All of the above help develop fine motor skills, as well as teach many concepts such as open/close, empty/full, up/down, in/out, and on/off. The whole lesson can be accompanied by favorite music or a story.

After finishing tasks like tooth-brushing, he would then go straight to his room, find his shelf to set the alarm clock, pick out an audio tape, pull back the covers, and get himself into bed. After about three months, he mastered the whole routine and now requires only verbal reinforcement. We are thinking about getting him a talking alarm clock. His teacher uses much the same approach at school, although we are still experimenting with various routines to determine Dan's best learning style. When the goal becomes a strength, choose another to work on, and refer back to it from time to time for reinforcement.

My best memory is my first cooking experience with Dan. He loved Jiffy corn muffins, so I tried to keep a supply of them already baked, for when he wanted them. Mistake! The day came when I had none made or in the pantry. When Dan was required to wait for anything he went wild, and naturally, didn't understand why there were no muffins. I decided that he needed to learn where muffins come from and why I couldn't produce them on the spot. We made a special trip to the store and bought only what we needed for muffins. He was still screaming intermittently.

We proceeded to make Jiffy muffins. Dan walked through every step, touched every ingredient, and helped mix the batter—still screaming intermittently. He sat on the counter top and waited for the timer to buzz, waited for the muffins to cool, and ate the entire box of them. While Dan didn't appreciate the play-by-play, he became more tolerable of waiting for his muffins. Then I received a news flash—maybe this would work for other things too!

Our weekend routine is a relaxed and unstructured recharging period. Dan and Jesse usually make the decisions for the weekend, unless there is already a planned activity or family function. This consists of sleeping with mom and dad, or watching a video together, staying up late, going out to eat one night, and visiting granny. Depending on the weather, we might decide to go sledding, swimming, on a long wagon ride walk, through the car wash, to a movie, have a friend over, or one of many favorite activities.

CONCERNS ABOUT THE FUTURE

Our ongoing concerns include the following:

1. Dan's health might deteriorate;
2. Dan might need a bone marrow transplant;
3. His surgery in 1989 might have caused more damage than is apparent currently;
4. Dan will transition to junior and senior high school.

I must attribute most of Dan's growth and development to fortunate periods of wellness during his life. During these times he makes his most significant strides in all areas of development. Unfortunately, these periods come in spurts. Medical interruptions include: broken bones and fractures, osteomyelitis (bone infection in his lower front jaw), two weeks on intravenous (IV) antibiotics in the hospital, 6–8 weeks on IV at home, and about two years of oral antibiotics.

His medical treatment includes monthly blood and urine workups and a yearly visit for a few days to his specialist in Charleston, South Carolina. These visits involve several tests: bone and bone marrow studies, blood and urine analysis, auditory and optic CAT scans, vision and auditory testing, and a developmental/psychological exam. Dan takes calcium and vitamin D orally and I give him three injections of Interferon a week. He needs to use an airway tube at night because he is prone to sleep apnea. We put the small curved plastic airway in his mouth after he is asleep and attach an oximeter probe to his finger. If the tube falls out, or he takes it out, or the probe falls off his finger, the alarm will sound. Dan sleeps pretty well like this but usually awakens at least once. On a "bad" night it may be eight times. We opted to use this method rather than give him a tracheostomy. I couldn't justify giving him one more complication for a few hours of trouble during the night. The doctors were happy when Don and I came up with the airway and it has worked for a few years now.

The thought of Dan going to junior and senior high school scares me to death. Hopefully he will have progressed to the point where he does not need 100 percent supervision and constant instruction. I feel I'd rather not have every professional's prognoses and predictions, as so many of them have not happened. Dan's condition is so rare that we really don't know what to expect. We have always chosen to keep the negatives, the disabilities, and the medical concerns on an easy-to-reach back burner and have tried to concentrate on immediate needs.

WHERE WE ARE

Dan is able to eat independently and prefers his place setting to be consistent. His food needs to be cut up into small pieces and we use a divided plate to help orient him for choosing food. He uses a fork independently, prefers fork-style food, and drinks from a cup.

Dan is able to go to the bathroom independently except for buttons and cleaning himself. His arms are too short for him to reach properly. He requires verbal prompts when doing hygiene. Dan knows his way around our house and can navigate on his own either by using the wall to walk short distances or scooting on his bottom. On his own, he can scoot or walk up and down stairs, open some doors, and pull back his bed covers. He can climb his "Little Tikes" slide alone, prefers to hold a hand to slide down, then proceeds to walk along the slide to go again.

Although our task is far from complete, the confidence we feel in dealing with the issues in our future comes from learning things the way Dan does. Before tackling the entire picture, we first break the issue into prioritized pieces, and tackle each piece one at a time. Things are much too overwhelming all at once, but each piece by itself is less intimidating. In this way, the entire issue is considered completely, leaving less to fall into the proverbial "crack." We have concentrated our efforts on trying to create a normal family atmosphere, while trying to help Dan see the world in a way that is meaningful and functional for him.

As for Jesse, she has added yet another avenue for Dan to view the world. In four short years, she has single-handedly integrated him into more things than we could ever imagine. Jesse is an energetic, spunky, and independent type

Dan's sister, Jesse, has become one of Dan's best teachers and her expectations keep him on his toes. She is just what the doctor ordered!

with high expectations for her brother. She rarely lets him off the hook for not pronouncing his "b," for misbehaving, or forgetting to say "excuse me." She has become one of Dan's best teachers and her expectations keep him on his toes. They have formed a special bond as a typical brother and sister, but they share another level of closeness that only the two of them understand. She is just what the doctor ordered!

Meeting families who have seen equally as rough—or worse—days has helped us to move forward and appreciate how lucky we are. Thanks to the support and optimism of a few doctors and educators, Dan is making the most of his abilities and talent. With this, I'm reminded of the song I referred to earlier: "No one gives them medals, the world don't know their name, but in someone's eyes, they're heroes just the same."

VIDEO RESOURCES

The following videos were selected because they provide specific information on essential aspects of an instructional program for young children whose multiple disabilities include visual impairment.

ACTIVITY-BASED INTERVENTION

This video demonstrates teaching strategies for using natural everyday activities as critical learning opportunities for infants and preschoolers with disabilities. Paul H. Brookes, Box 10624, Baltimore, MD 21285-0624.

AIN'T MISBEHAVIN'

This video discusses strategies for interpreting and dealing with challenging behaviors of students who are deaf-blind. Texas School for the Blind and Visually Impaired, Outreach Dept., 1100 West 45th. St., Austin, TX 78756-3494.

ANALYZING THE COMMUNICATION ENVIRONMENT (ACE)

This video and accompanying manual provide a format for evaluating the activity, student's communication system, adult interaction, peer interaction, materials and specific opportunities for communication. Communication Skill Builders, P.O. Box 42050-Y, Tucson, AZ 85733.

A SPECIAL START

This video shows visually impaired preschoolers in integrated settings. Lighthouse National Center for Vision and Child Development, 800 2nd Ave., New York, NY 10017.

BRINGING OUT THE BEST: ENCOURAGING EXPRESSIVE COMMUNICATION and GETTING IN TOUCH

These two videos focus on interrupted routines, touch and object cues, and other communication strategies with children with multiple disabilities including those who are deaf-blind. Research Press, 2612 N. Mattis Ave., Champaign, IL 61821.

CAN DO SERIES

Seeing things in a new way: What happens when you have a blind baby
Learning about the world: Concept development
Becoming a can do kid: Self-help skills
Making friends: Social skills
Going places: O&M

This series of five videos shows infants, preschoolers, and children who are visually impaired in everyday situations with their families. The tapes highlight instructional strategies and interviews with blind adults. Visually Impaired Preschool Services, 1215 S. 3rd. St., Louisville, KY 40203.

COACTIVE SIGNS

Introduction to tactile communication for children who are deaf-blind
Using tactile signals and cues with children who are deaf-blind
A coactive sign system for children who are deaf-blind

These videos demonstrate the use of tactile signals and coactive signs for communicating with children who are deaf-blind. HOPE Inc., 809 North 800 East, Logan, UT 84321.

COMMUNICATING WITH PREVERBAL INFANTS AND YOUNG CHILDREN

This video shows strategies for developing turn-taking and early conversations with infants and preschoolers with disabilities. Learned Managed Designs, 2201 K.West 25th. St., Lawrence, KS 66047.

EARLY USE OF TOTAL COMMUNICATION

This video provides information about the relationship between the use of sign language

VIDEO RESOURCES, continued

and speech development, ways to choose, teach, and use signs to children within the family routine, and parents' experiences with using a combination of speech and sign language with young children with Down's syndrome. Paul H. Brookes, Box 10624, Baltimore, MD 21285-0624.

THE EARLY COMMUNICATION PROCESS USING MICROSWITCH TECHNOLOGY

This video with accompanying manual covers the use of microswitches with children with severe multiple disabilities to develop communication. Communication Skill Builders, P.O. Box 42050-Y, Tucson, AZ 85733.

FEEDING YOUNG CHILDREN WITH SPECIAL NEEDS

This video shows ways to facilitate feeding with infants and preschoolers with disabilities, includes reading the child's cues, appropriate positioning equipment, and types of foods. Learned Managed Designs, 2201 K.West 25th. St., Lawrence, KS 66047.

FUNCTIONAL VISION: LEARNING TO LOOK

This video provides an overview of types of vision loss, different visual skills, and ways to encourage a child to use vision during everyday activities. BVD Promo Services, P.O. Box 930182, Verona, WI 53593-0182.

GETTING THERE: A LOOK AT EARLY MOBILITY SKILLS OF FOUR YOUNG BLIND CHILDREN

This video highlights instructional strategies with and mobility skills of infants and preschoolers who are blind. Blind Babies Foundation, 1200 Gough St., San Francisco CA 94104.

HANDLING AND POSITIONING YOUNG CHILDREN WITH MOTOR IMPAIRMENTS

This video illustrates the motor differences in young children who are hypotonic and those who are hypertonic, and appropriate handling and positioning techniques to meet their different needs. Learned Managed Designs, 2201 K.West 25th. St., Lawrence, KS 66047.

HELPING YOUR CHILD LEARN SERIES

Vol I: When and where to teach, teaching self control, teaching playtime skills

Vol II: What to teach, teaching choices, teaching dressing skills

Vol III: How to teach, teaching with adaptations, teaching mealtime skills

This is a series of videos on young children whose multiple disabilities include vision and hearing impairments. These videos focus on home activities and instructional strategies are suggested within the family routine. BVD Promo Services, P.O. Box 930182, Verona, WI 53593-0182.

LET'S EAT: FEEDING A CHILD WITH A VISUAL IMPAIRMENT

This video (accompanying booklet is available) demonstrates ways to develop eating skills in infants, toddlers, and preschoolers with visual impairments. Blind Childrens Center, 4120 Marathon St., Los Angeles, CA 90029.

OBSERVING AND ENHANCING COMMUNICATION SKILLS FOR INDIVIDUALS WITH MULTI-SENSORY IMPAIRMENTS

This is a manual and two video tapes on observing, analyzing, and developing the communication skills of infants, preschoolers, school-aged students, and adults who have multiple disabilities. Communication Skill Builders, P.O. Box 42050-Y, Tucson, AZ 85733.

TANGIBLE SYMBOL SYSTEMS

This video and accompanying manual demonstrates the use of objects to communicate about events, people, and things. Communication Skill Builders, P.O. Box 42050-Y, Tucson, AZ 85733.

INFORMATION AND SOURCE LIST

PUBLICATIONS

American Foundation for the Blind (AFB), Eleven Penn Plaza, New York, NY 10001, (212) 620-6000. Information: (800) 232-5463. Publication of books, brochures, and videos relating to blindness.

Blind Childrens Center, 4120 Marathon Street, Los Angeles, CA 90029, (213) 664-2153. Fax (213) 665-3828. In California (800) 222-3567. In USA (800) 222-3566. Publications and referral services.

The Hadley School for the Blind, P.O. Box 299, Winnetka, IL 60093-0299, (708) 446-8111 or (800) 323-4238. Fax (708) 446-8153. Free correspondence course materials for families of visually impaired children including: Child Development; Braille Reading for Family Members; Knowing the System; and Learning, Play, and Toys.

National Information Center for Handicapped Children and Youth, P.O. Box 1492, Washington, DC 20013, (703) 893-6061, TDD (703) 893-8614, or (800) 999-5599. Publications and information focused on the needs of children and youth with disabilities.

National Organization for Rare Disorders (NORD), P.O. Box 8923, New Fairfield, CT 06812, (203) 746-6518. Free information and publications on rare disorders.

CATALOGS

American Printing House for the Blind (APH), 1839 Frankfort Avenue, P.O. Box 6085, Louisville, KY 40206, (502) 895-2405 or (800) 223-1839. Fax (502) 895-1509. Source for aids and appliances; braille, large print, and recorded materials, equipment, and instructional materials. APH materials can be purchased through Federal Quota funds.

Braille Institute of America, Inc., 741 North Vermont Avenue, Los Angeles, CA 90029-3594, (213) 663-1111. Fax (213) 666-5881. Source for large print, braille, and recorded materials.

Can-Do Products Independent Living Aids, Inc., 27 East Mall, Plainview, NY 11803, (800) 537-2118. Source for aids and devices to assist in daily living skills and activities.

Children's Book-of-the-Month Club, National Braille Press, 88 St. Stephen Street, Boston, MA 02115, (617) 226-6160. Provides regular-print picture book of the month with plastic brailled over each page to members.

DVS Home Video Catalogue, WGBH Educational Foundation, 125 Western Ave, Boston, MA 02134, (800) 333-1203. Description Video Service (DVS) describes the visual elements of a movie—the action, costumes and sets—of popular movies and documentaries.

Don Johnson Incorporated, 900 Winnetka Terrace, Lake Zurich, IL 60047, (312) 438-3476. Source for software and hardware adaptations designed to promote literacy, communication, or computer access.

Exceptional Teaching Aids, 20102 Woodbine Avenue, Castro Valley, CA 94546, (510) 582-4859. Products for visually impaired individuals of all ages including software; braille, large print, and audio materials; transcribing aids, math materials and manipulatives; labeling/marking aids; and speech access.

INFORMATION AND SOURCE LIST, continued

Fred Sammons, Inc., Box 32, Brookfield, IL 60513-0032, (800) 323-5547. Source for adaptive devices and equipment.

Seedling Braille Books for Children, P.O. Box 2395, Livonia, MI 48151-0395, (313) 427-8552 or (800) 777-5882. Source for braille books for children ages 1-14 and combination print/braille books.

Toys for Special Children, Steven Kanor, Inc., 101 Lefurgy Avenue, Hastings-on-Hudson, NY 10707, (914) 478-0858 or (914) 478-0960. Source for switch activated toys.

Twin Vision Lending Library, American Action Fund for Blind Children and Adults, 18440 Oxnard Street, Tarzana, CA 91356, (818) 343-2022. Twin Vision Books publishes children's books that combine print and braille on facing pages so that blind and sighted people can read together. Lends Twin Vision Books and other braille publications written on the preschool to junior-high reading level.

PROFESSIONAL ORGANIZATIONS

Association for Education and Rehabilitation of the Blind and Visually Impaired (AER), 206 North Washington Street, Alexandria, VA 22314, (703) 548-1884. Publications, newsletters for members, professional conferences, and continuing education seminars.

Council for Exceptional Children (CEC), 1920 Association Drive, Reston, VA 22091, (703) 620-3660. Publishes periodicals and other materials on teaching disabled children. Sponsors a national professional conference and has several divisions which include:

- Division for the Visually Handicapped publishes a newsletter to members.
- Division of Early Childhood publishes a newsletter and journal to members and sponsors a conference.

National Association for Parents of the Visually Impaired (NAPVI), P.O. Box 317, Watertown, MA 02272-0317, (617) 972-7441 or (800) 562-6265. Provides support to parents and families of visually impaired children:

- Operates a national clearinghouse for information, education, and referral;
- Promotes public understanding of the needs and rights of visually impaired children; and
- Education and training for parents about available services and their children's rights.

The Association for Persons with Severe Handicaps (TASH), 11201 Greenwood Avenue, North, Seattle, WA 98133, (206) 361-8870. Disseminates information, publishes a newsletter and journal to members, and sponsors an annual conference.

BLANK FORMS

Permission is given for duplication of forms for instructional use.

WEEKDAY SCHEDULE
WEEKEND SCHEDULE
PRIORITIZING WHAT TO TEACH
DISCREPANCY ANALYSIS
COMMUNICATION BEHAVIORS AND FUNCTIONS
ROUTINE ANALYSIS
OBJECTIVES WITHIN ROUTINES MATRIX
DATA COLLECTION BY PROMPTING HIERARCHY
VISION SUPPORT SERVICES OBSERVATION

WEEKDAY SCHEDULE

Child _____ Date _____

Parent/Care Provider _____

Time	Activity	Description of Child's Performance	Family Priorities

WEEKEND SCHEDULE

Child _____ Date _____

Parent/Care Provider _____

Time	Activity	Description of Child's Performance	Family Priorities

PRIORITIZING WHAT TO TEACH

Directions: List each activity in the spaces to the right. Answer each question for each activity. 3 = Strongly agree 2 = Agree 1 = Somewhat agree 0 = Disagree									
Is this activity practical or functional?									
Is this activity chronologically age appropriate?									
Is this activity a family priority?									
Is this activity motivating for the child?									
Is this activity achievable based on the child's development?									
Can this activity be taught in the child's natural environment?									
Does this activity occur frequently?									
Can this activity be taught in familiar environment?									
Is this activity a priority for the instructional staff?									
Can this activity be taught safely?									
Total Score/ Possible Total Score = 30									

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DISCREPANCY ANALYSIS

Name _____ **Date** _____

Environment _____ **Activity** _____ **Skill Area** _____

Natural Cues	Skills	Baseline Trial		Discrepancy Analysis	Adaptations

COMMUNICATIVE FUNCTIONS

Name _____ **Date** _____

Observer/Interviewer _____ **Informant** _____

Communication Behaviors	PROTEST	REFUSAL	REJECTION	REQUEST FOR OBJECT	REQUEST FOR ACTION		Situations
Generalized movements							
Changes in muscle tone							
Vocalizations							
Facial expressions							
Orientation							
Touching another person							
Manipulating/moving with another person							
Acting/using objects							
Assuming positions							
Going to places							
Conventional gestures							
Depictive actions							
Withdrawal							
Aggressive/self-injurious							
Other: Echolalia							
One word speech							
One word sign							
Combined words							

COMMUNICATIVE FUNCTIONS

Name _____ **Date** _____

Observer/Interviewer _____ **Informant** _____

Communication Behaviors							**Situations**
Generalized movements							
Changes in muscle tone							
Vocalizations							
Facial expressions							
Orientation							
Pause							
Touching another person							
Manipulating/moving with another person							
Acting/using objects							
Assuming positions							
Going to places							
Conventional gestures							
Depictive actions							
Aggressive/self-injurious							
Other: Echolalia							
One word speech							
One word sign							
Combined words							

COMMUNICATIVE FUNCTIONS

Name _____ **Date** _____

Observer/Interviewer _____ **Informant** _____

Communication Behaviors	COMMENT ON AN OBJECT	COMMENT ON AN ACTION	REQUEST INFO.				Situations
Vocalizations							
Touching another person							
Manipulating/moving with another person							
Acting/using objects							
Conventional gestures							
Depictive actions							
Other: Echolalia							
One word speech							
One word sign							
Combined words							

COMMUNICATIVE FUNCTIONS

Name _____ **Date** _____

Observer/Interviewer _____ **Informant** _____

Communication Behaviors	REQUEST SOCIAL ROUTINE	REQUEST COMFORT	REQUEST PERMISSION	GREET	CALL	SHOWOFF	Situations
Generalized movements							
Changes in muscle tone							
Vocalizations							
Facial expressions							
Orientation							
Pause							
Touching another person							
Manipulating/moving with another person							
Acting/using objects							
Assuming positions							
Going to places							
Conventional gestures							
Depictive actions							
Aggressive/self-injurious							
Other: Echolalia							
One word speech							
One word sign							
Combined words							

ROUTINE ANALYSIS

Child _____ Date _____

Activity _____

Steps in Routine	Natural Clues	Child Behaviors to Encourage	Input

OBJECTIVES WITHIN ROUTINES MATRIX

Name _____ Date _____

Objectives	Daily Routines				

DATA COLLECTION BY PROMPTING HIERARCHY

Scoring
0 = Did not perform
1 = Physical guidance
2 = Physical prompting
3 = Modeling
4 = Direct verbal
5 = Indirect verbal
6 = Gestural prompt
7 = Visual/tactile prompt
8 = Natural cue

Name _____

Environment _____

Activity/Skill _____

Steps							
Total Score Achieved Total Score Possible*							
Percentage							

*Total Score Possible = # x number of steps in the activity/skill

VISION SUPPORT SERVICES OBSERVATION FORM
EARLY CHILDHOOD

Child _____ Date _____ Other Notes:

Time _____ Observer _____

Building _____ Teacher _____

Directions: Use the following key followed by a brief description. **A** = Adequate **M** = Modify **N** = Need or **Yes/No**

Environmental Factors

- ☐ LIGHTING:
- ☐ VISUAL STIMULATION:
- ☐ AUDITORY STIMULATION:
- ☐ CONTRAST:
- ☐ ACTIVITY:
- ☐ LEVEL OF ACTIVITY IN ROOM:

Movement within Classroom Environment

- ☐ AMBULATES FREELY WITHIN ENVIRONMENT
  - ☐ WALKING ☐ CRAWLING
- ☐ ASSISTED MOBILITY ADAPTED EQUIPMENT
  - ☐ WHEELCHAIR ☐ WALKER ☐ PERSON ASSISTED
- ☐ POSITIONING
  - ☐ INDEPENDENT HEAD CONTROL:
  - ☐ CAN INDEPENDENTLY ATTAIN POSITION:
  - ☐ SENSE OF POSITION IN SPACE:

Looking Behaviors

- ☐ QUALITY OF FIXATION RESPONSES: (Amount, duration, consistency)
- ☐ DISTANCE, COLOR, SIZE OF OBJECTS:
- ☐ HOLDING THINGS CLOSE:
- ☐ FAVORING ONE EYE:
- ☐ ECCENTRIC VIEWING:
- ☐ EYE RUBBING/EYES RED:
- ☐ LIGHT SENSITIVITY:

Interaction with Objects and People

- ☐ VISUAL:
- ☐ TACTILE:
- ☐ AUDITORY:

Manipulation of Objects

- ☐ SIMPLE INTERACTIONS/MOUTHING, HITTING OBJECTS TOGETHER OR ON SURFACE, ETC:
- ☐ COMPLEX INTERACTION/STUDIES VISUALLY, TACTUALLY, AND DEMONSTRATES UNDERSTANDING OF SIMPLE USES FOR TOY OR OBJECT (PUSH CAR, ROLLS BALL, ETC):

Sound Localization Skills

- ☐ "QUIETING" BEHAVIOR TO SOUND:
- ☐ TURNS TOWARD SOUND SOURCE TO SIDE, FRONT, BEHIND:
- ☐ TURNS & LOOKS AT SOUND SOURCE TO SIDE, FRONT, BEHIND:

Communication

- ☐ CHILD—VERBAL:
  CHILD—AUGMENTATIVE EQUIPMENT:
- ☐ TEACHER/STAFF—VERBAL:
  TEACHER/STAFF—SIGNING:
  TEACHER/STAFF—VERBAL & TACTILE CUEING:

ABOUT THE CONTRIBUTORS

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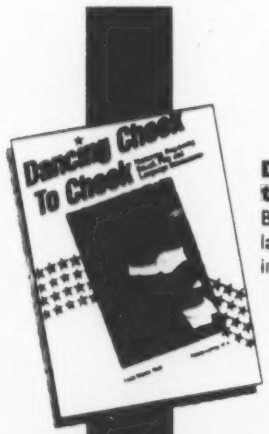

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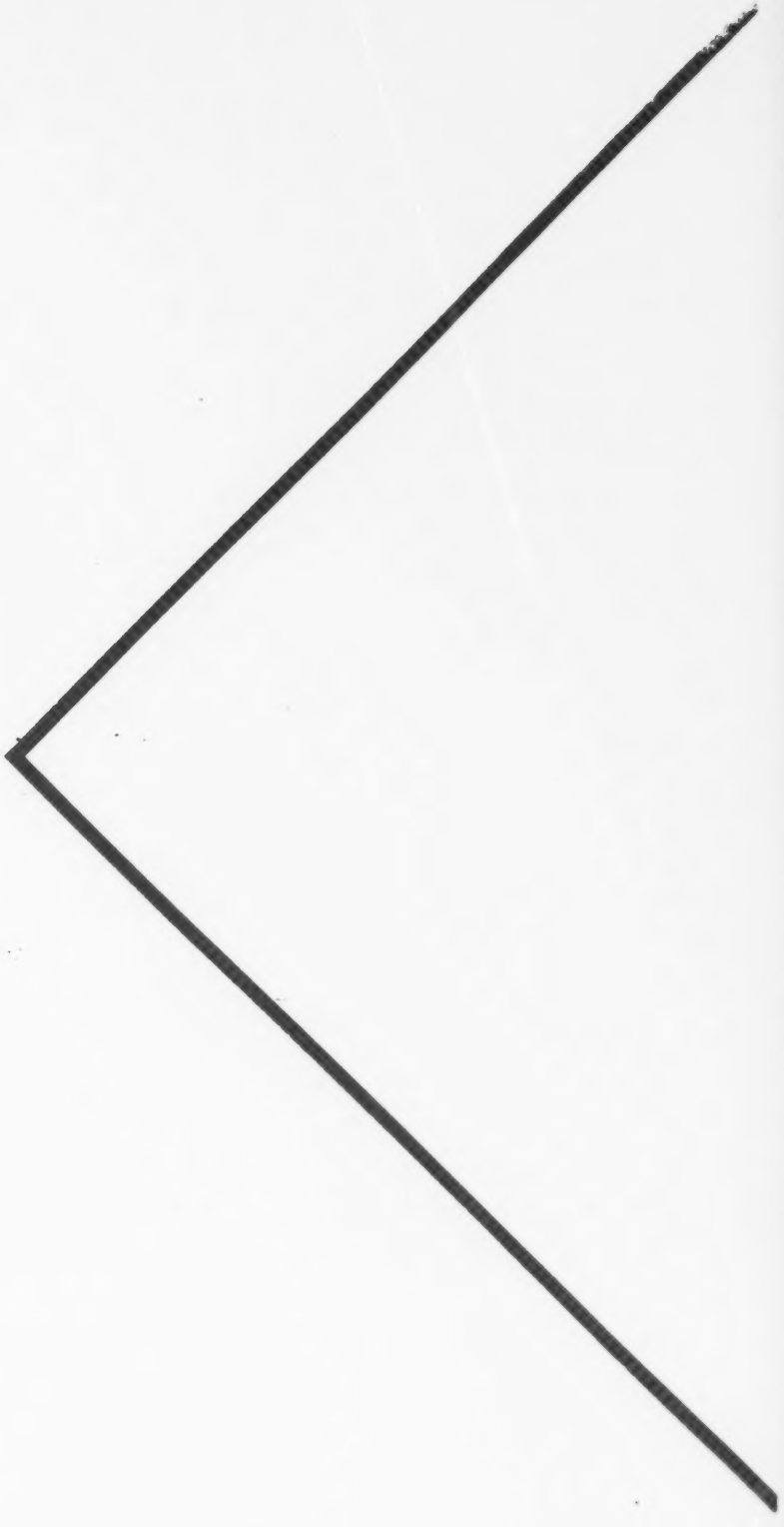

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